

User Manual

Ultra-Fast Dispenser

SC800E-L2



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About This Manual

Notes

To ensure the safe use of the product, please read through the notes below carefully:

1. The warranty period agreed for this product is subject to the contract.
2. This manual is intended for personnel who are responsible for product installation and other work on the product. Users must have certain electrical and mechanical expertise and be familiar with the electrical and mechanical schematics and the characteristics of electronic components. SUNGROW shall not be held liable for any personal injury or financial loss arising from the installation carried out by non-qualified personnel or not in compliance with the safety instructions specified in this manual.
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5. To ensure the safety of the installation personnel, the product, and the system, follow the safety instructions specified in this manual strictly when installing the product. SUNGROW shall not be held liable for any personal injury or financial loss arising from failure to follow the instructions specified in this manual.
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Valid for

Product Model	Product Aliases
SC800E-L2	Charger, device, product

Target Group

This manual is intended for qualified technical persons who are responsible for the installation, operation, and maintenance of the charger. All installation operations must be performed by qualified technical persons. Operators must:

- Have certain electrical wiring, electronic, and mechanical expertise, and be familiar with electrical and mechanical schematics.

- Have received professional training in the installation and commissioning of electrical devices;
- Be able to respond quickly to dangers or emergencies that may occur during the installation and commissioning;
- Be familiar with applicable local standards and specifications of the country/region where the project is located;
- Read through this manual carefully and have a good understanding of the relevant safety instructions.

How to Use This Manual

Read through this manual carefully before using the product, and keep it in an accessible location. The contents of this manual are subject to continuous updates and corrections; however, there may still be slight inconsistencies or errors compared with the actual product. In such cases, the actual product you have purchased should take precedence. You can find the latest version of the user manual at support.sungrowpower.com.

Symbols in the Manual

To ensure the safe and efficient use of the product, the manual provides relevant safety information, which is highlighted using relevant symbols. The following lists symbols that may be used in this manual (the list may not be exhaustive). Please read them carefully for better use of this manual.

DANGER

Indicates a high potential hazard that, if not avoided, may lead to death or serious injury.

WARNING

Indicates a moderate potential hazard that, if not avoided, may lead to death or serious injury.

CAUTION

Indicates a low potential hazard that, if not avoided, may lead to minor or moderate injury.

NOTICE

Indicates a potential risk that, if not avoided, may lead to device malfunctions or financial losses.



Indicates supplementary information, emphasis on specific points, or tips related to the use of the product that might solve problems or save time.

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1 Safety Instructions

Follow strictly the relevant safety instructions during the process of product installation, commissioning, operation, and maintenance. Improper use or misoperation may result in:

- Injury to or death of the operator or other people.
- Damage to the product, or to the property that belongs to the operator or a third party.

Strictly follow the safety instructions stated in the manual to avoid the hazards mentioned above.

NOTICE

- **Do not perform any operation on the product (including but not limited to, handling, installing, powering on, and maintaining the product, performing electrical connection, and working at heights) in harsh weather conditions, such as thunder and lightning, rain, snow, or winds above Beaufort scale 6. SUNGROW shall not be held liable for any damage to the product due to force majeure, such as earthquakes, floods, volcanic eruptions, mudslides, lightning strikes, fires, wars, armed conflicts, typhoons, hurricanes, tornadoes, or other extreme weather conditions.**
- **In case of fire, evacuate the building or product area and call the fire department. Do not go back to the fire area.**
- **Tighten the screws at the specified torques using proper tools when fastening the product and terminals. Otherwise, the product may be damaged. The damage caused therefrom will not be covered by the warranty.**
- **Understand how to use the tools properly first before starting using them, to avoid causing personal injury or product damage.**



- Safety instructions in this manual serve only as a supplement and do not cover all required safety practices. All work should be carried out considering the actual situation on the site.
- SUNGROW shall not be held liable for any damage caused by violation of general safe operation requirements, safety standards, and the safety instructions specified in this manual.
- Product installation, operation, and maintenance should be conducted in compliance with applicable local laws, regulations, and specifications. Safety instructions in this manual should only be a supplement to the local laws, regulations, and specifications.

1.1 Packaging and Transportation Safety

Packaging

- The product is packaged in cartons or wooden crates, with handling directions marked on the box.
- The device is protected with stretch film or a volatile corrosion inhibitor (VCI) bag, supported with foam on all sides, and then placed inside the packaging box.

Transportation

- All work related to transportation must be carried out in compliance with the applicable local laws and regulations of the country/region.
- Do not turn the device upside down during transportation.
- Measures should be taken to fasten the goods during transportation, so as to avoid damage to product packaging due to strong shaking or bumping.
- Carry out an inspection upon receiving the delivery. In case of any damage to the goods during transportation, contact your carrier and SUNGROW.

1.2 Unpacking and Storage Safety

Unpacking and Inspection

NOTICE

Unqualified personnel are forbidden from disassembling the device or moving its components.

- Check if the product you have received matches the order you placed.
- Check if the items packed in the box match the packing list.
- Inspect the product for damage to its appearance or structural parts.
- Check if the safety signs, warning labels, and the nameplate on the product are all legible.
- In case of any problem with the above-mentioned inspection items, do not install the device and contact SUNGROW in time.

Storage Safety

- Store the packaged device indoors, within a relative humidity of 5%–95% and ambient temperature of -40°C to +70°C.
- The place where the product is stored should be kept dry, clean, and well-ventilated, protected from hazardous gases.
- Do not store the product in a place where corrosives are kept.

1.3 Installation Safety

Improper installation may result in personal injuries, while poor operating environments may affect the device's charging efficiency. Therefore, installation personnel must read through the instructions specified in this section carefully before installing the product.

Installation Precautions

- All work related to installation must be conducted in compliance with the applicable local laws and regulations.
- You may proceed with the subsequent work only if qualified personnel designated by SUNGROW confirm that the environment where the device is to be installed meets the requirements after an assessment.
- You can only install a product that is intact without any signs of damage.
- Installation must be performed by qualified personnel who wear proper personal protective equipment.
- Ensure all electrical connections of the product have been disconnected before installation.
- Before installation, inspect the equipment and tools to be used and ensure they have all undergone regular maintenance.
- Install the product in a well-ventilated place.
- Do not install the product in an environment with flammables, explosives, or smoke.
- Stop the installation in the event of severe weather, such as heavy rain, heavy fog, or strong wind.
- Follow the installation steps in the manual in the correct order. Failure to follow installation instructions or unauthorized modification of the device may result in personal injury or device damage.
- Drilling holes in the product is strictly prohibited. Drilling will compromise the device's sealing and electromagnetic shielding performance and may damage internal components. Metal shavings from drilling may short circuit boards.
- Live working is strictly prohibited during the installation process to prevent personal injury.

Handling Precautions

- Installation personnel must wear protective equipment such as anti-impact shoes and safety gloves when handling the device to ensure their own safety.
- When handling the product, get prepared for carrying its weight and keep the balance to prevent it from tilting or falling.
- Do not let go of the device during handling, unless it has been firmly fixed in place.
- Upon arrival at the site, packaged wooden crates or pallets must be loaded, unloaded, and stacked using a crane or forklift with sufficient rated capacity. All handling must be performed by qualified personnel.

Crane Operation Precautions

- Use only specialized cranes that are operated by qualified personnel.

- The crane must have a load capacity sufficient to lift the device.
- The sling must have a tensile strength and length that meet the requirements.
- The lifting eyes at the top must be firmly attached.
- No one is allowed to pass or stay under the product when it is lifted up.
- When rotating the crane for unloading, make it rotate at a low speed. Keep the load steady and as close to the ground as possible.
- Do not swing the sling during handling.
- Do not keep the product lifted up for a long period of time.
- Do not drag the product along any surface.
- Keep the product balanced throughout the hoisting process and avoid collisions with walls or other objects.
- Stop hoisting immediately in severe weather conditions, such as heavy rain, fog, or strong winds.
- Always follow the crane's safety operating procedures throughout the hoisting operation.
- The entire on-site hoisting process must be supervised by qualified personnel.
- Erect warning signs or set up safety warning tape in the operational area.
- Lock all cabinet doors before lifting.

Forklift Operation Precautions

- Use only specialized forklifts that are operated by qualified personnel.
- The forklift must have a load capacity sufficient to carry the device.
- Make sure there are no obstacles, slopes, or other uneven terrain along the moving path of the device.

1.4 Electrical Safety

Improper wiring may result in personal injuries. Hence, installation personnel must read through the wiring instructions carefully before proceeding with this work.

Cable Requirements

- The selection and routing of cables must comply with local laws, regulations, and codes.
- Cables of the same type should be bundled together using cable ties, ensuring a neat appearance and undamaged insulation; different types of cables should be routed separately and must not be entangled or crossed.
- It is recommended to use cable sleeves to protect cables at branch points.
- Under adverse environmental conditions (e.g., high ambient temperature), select cables according to applicable standards or local regulations to ensure sufficient current-carrying capacity.

Wiring Precautions

DANGER

- **Electrical connections must be performed by qualified personnel who wear personal protective equipment.**
- **Be sure to use specialized insulated tools when performing electrical connections.**
- **Never perform electrical connections while the system is energized, as this can result in personal injury.**

NOTICE

Direct contact between aluminum conductors and copper busbars is strictly prohibited to prevent galvanic corrosion and ensure reliable connections.

- All work related to wiring must be conducted in compliance with the applicable local laws and regulations of the country/region.
- Wiring must be done in compliance with the applicable local grid regulations and relevant safety instructions specified for the device.
- The specification of cables used should meet requirements accordingly. The cables should be properly insulated and firmly connected.
- Observe the warning labels on the product, and perform operations by strictly following the corresponding safety instructions.
- Before electrical connections, make sure that the product is not damaged. Otherwise, it may cause danger!
- Before electrical connection, make sure the product and all switches connected to it are turned "OFF" and cannot be accidentally re-energized; otherwise, it may lead to electric shocks.
- Before electrical connection, be sure to test with a measuring instrument and confirm the cables are voltage-free.
- Improper wiring may cause damage to the product and such damages will not be covered by warranty.
- After wiring, seal all gaps at the cable entry and exit points with fireproof and waterproof materials, such as fireproof mud, to prevent foreign objects or moisture ingress, which can compromise the product's long-term stable operation.

Electrostatic Discharge Precautions

- Do not touch the circuit board unless it is necessary.
- Observe the provisions for protection against electrostatic discharge and wear anti-static wrist straps.

Grounding Requirements

Always complete grounding connections before performing any wiring.

- The grounding cable must be reliably grounded; otherwise, it may cause a fatal electric shock to the operator.
- The grounding cable must be reliably grounded; otherwise, the device may be damaged if struck by lightning.
- The grounding cable must be reliably grounded; otherwise, the device may not operate normally.

1.5 Operational Safety

There is high voltage inside the device when it is running, and improper operation may cause personal injuries or property damage. Therefore, please perform operations by strictly following the safety instructions specified in this manual and other relevant documents when using the charger to charge an EV.

DANGER

- **Do not touch any live part of the device when it is running; otherwise, it may lead to electrical shocks.**
- **Do not touch any wiring terminal of the device when it is running; otherwise, it may lead to electrical shocks.**
- **Do not remove any part or component from the device when it is running; otherwise, it may lead to electrical shocks.**

NOTICE

Strictly follow the charging instructions on the device; otherwise, there is a risk of electric shock and fire.

- All operations on the device must be performed in compliance with the applicable local laws and regulations of the country/region.
- Do not use an extension cable when connecting the EV to the charger.
- Do not bend, crush, or run over the charging connector, which may result in mechanical damage.
- Only EVs can be connected to the charger. Do not connect any other devices for charging (e.g., electric tools).
- Make sure the charging connector does not come into contact with heat, dirt, or water.
- Please handle the charging connector gently. Plug or unplug the connector neatly at one go, and do not shake it. Damage resulting from improper use, accidents, or misuse (including but not limited to dropping, or impact) is not covered under warranty.
- Start charging only when the vehicle is stationary. Do not start the vehicle in the middle of a charging process.
- If the device is not covered by a rainproof shield, please charge with caution in the event of a thunderstorm.

- Monitor the charging process throughout. In severe weather conditions such as heavy rain, thick fog, or strong wind, terminate the charging process immediately.
- Do not use the charger if the connector or cable shows defects such as cracks, wear, breaks, or exposed conductors. Contact service personnel immediately.
- Do not remove the connector from the vehicle during charging to ensure the safety of both people and the vehicle.
- Do not let children go near or use the charger during charging to prevent them from getting hurt.
- Do not touch any hot part of the charger (e.g., air outlet for heat dissipation) during charging; otherwise, it may cause burns.
- After charging, insert the charging connector back in the holder on the charger, so as to avoid the ingress of water or sand. Also, put away the cable in time and keep it in a place out of the vehicle's reach so that it will not get run over.
- In case of abnormal conditions, press the emergency stop button immediately. Do not attempt other operations. Contact qualified service personnel.
- During daily operation, the doors of the product must all be closed and locked. Besides, the keys should be pulled out and handed over to the designated personnel for safekeeping. This prevents accidents caused by unauthorized entries and protects the internal devices against rainwater or damage from animals.

1.6 Maintenance Safety

There is high voltage inside the device when it is running, and improper operation may cause personal injuries, property damage, or even death. Therefore, always power off the device before maintenance and perform operations by strictly following the safety instructions specified in this manual and other relevant documents.

DANGER

- **Only when no current or voltage is present can qualified personnel who wear protective equipment perform device maintenance.**
 - **Do not touch the contacts inside any charging connector when the charger is powered on.**
- All work related to maintenance must be done in compliance with the applicable local laws and regulations.
 - Perform device maintenance only when you have a good understanding of this manual and appropriate tools and testing instruments.
 - The charging connectors must be inspected for damage on a regular basis to check if their enclosure is in a good state and if supporting facilities are all in readiness.
 - Keep the charging connectors clean and dry. Clean them off in case of any dirt.
 - Wait at least 10 minutes after the product stops running and check if the voltage lowers to a safe level.

- Even if the product has stopped running, it may still be hot and cause burns. Perform operations on the device wearing protective gloves after it cools down.
- Before maintenance, be sure to check the warning labels inside the product and follow the corresponding instructions.
- Before maintenance, make sure the product, the external devices connected to it, and the electrical connections are in a safe state.
- During the maintenance process, prevent irrelevant personnel from entering the site. Set up temporary warning signs or fence off an area to keep irrelevant personnel away and avoid accidents.
- Maintenance should be performed by following the electrostatic discharge protection regulations.
- Stop maintenance in the event of extreme weather.
- Only after all faults that may affect the device's safety performance are resolved can the device be powered on again.
- For a product that has been shut down for more than 3 months, a thorough and detailed inspection must be carried out before powering it on again. Only after it is inspected and tested by qualified personnel can it be powered and put into operation again.
- To minimize the risk of electric shocks, do not perform maintenance operations that are not specified in this manual. If necessary, contact SUNGROW for maintenance. Losses arising from failure to observe this instruction will not be covered by warranty.
- Do not use water, alcohol, oil, or other solvents to clean internal or external electrical components.
- Do not open the door and maintain the system on rainy, humid, or windy days. SUNGROW shall not be held liable for any possible outcome arising from failure to observe this instruction.
- For devices with multiple inputs, disconnect all inputs to ensure a complete power-off before maintenance.
- During power-off maintenance, establish clear warning signs at the disconnection points to ensure they cannot be accidentally re-energized.
- If the paint on the device's enclosure peels off or the enclosure gets rusty, repair it in time. Otherwise, the device performance may be affected.
- Before closing the doors, ensure all tools, metal parts, and debris are removed from the interior.

1.7 Disposal Safety

Dispose of the product strictly in accordance with applicable local regulations and standards to avoid property damage or personal injury.

Disposal Precautions

- All work related to product disposal must be done in compliance with the applicable local laws and regulations of the country/region.

- Ensure the safety signs, warning labels, and the nameplate on the product are all legible before disposing of it.

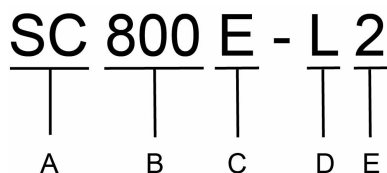
2 Product Description

2.1 Product Overview

SC800E-L2 is designed for public charging stations to provide fast charging for electric vehicles. The dispenser features a display screen that, in addition to basic charging functions, allows users to access extended features such as viewing charging data.

Product model

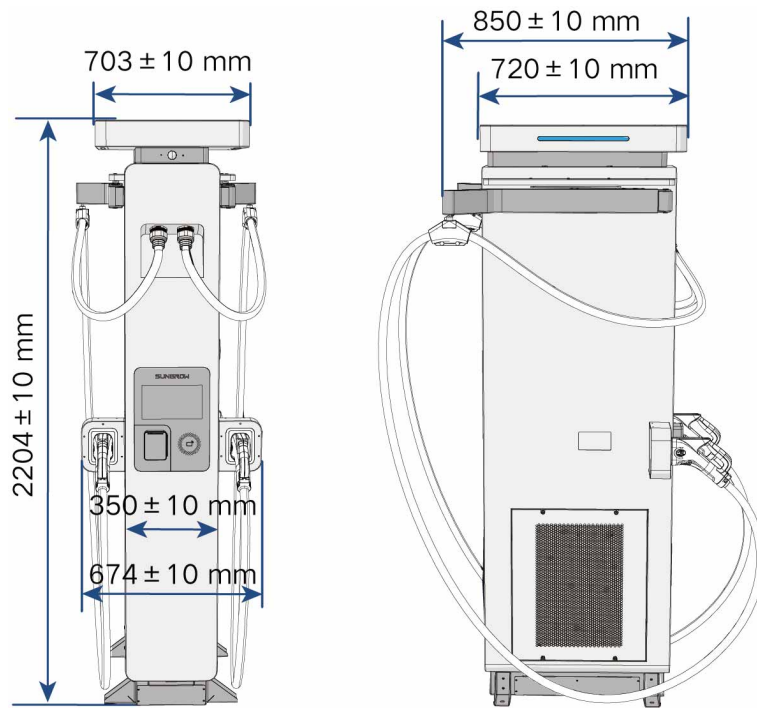
SC800E-L2 model is illustrated in the figure below.



No.	Meaning
A	Product category: Dispenser
B	Maximum single-connector output current: 800 A
C	Applicable standard: European standard
D	Structural type: Ultra-fast dispenser
E	Number of charging connectors supported: 2

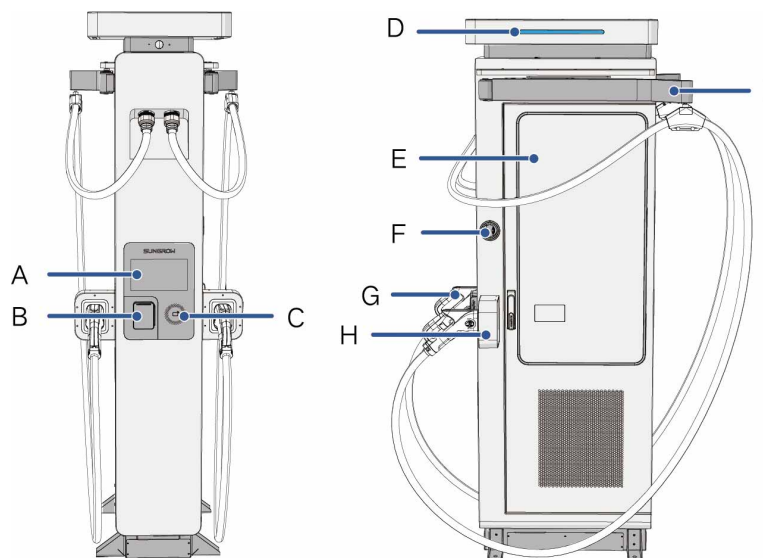
2.2 Product Exterior

Dimensions



* The product dimensions are subject to the actual product received.

Appearance



(A) Display

(B) Card reader

(C) Power ring indicator (card reader)

(D) Charging status indicator

(E) Dispenser door

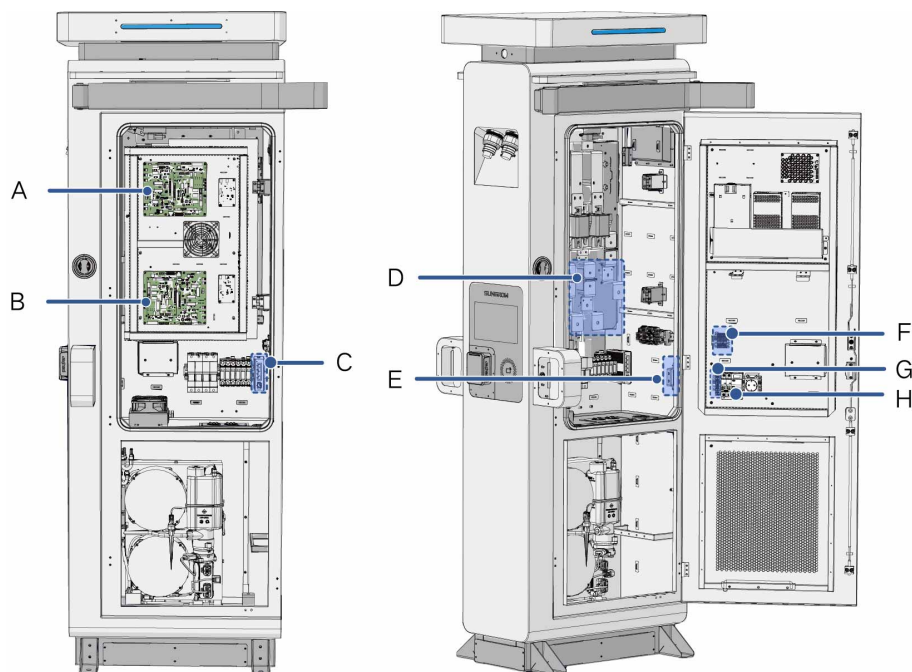
(F) Emergency stop button

(G) Charging connector

(H) Holder

(I) Cable hanger

2.3 Internal Structure



(A) CCU1 (Charging Control Unit for charging connector A)

(B) CCU2 (Charging Control Unit for charging connector B)

(C) Switch

(D) DC input copper busbar

(E) Dispenser grounding copper busbar

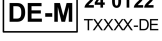
(F) CAN terminal block

(G) Power terminal block

(H) AC miniature circuit breaker

2.4 Marks on the Product

To ensure personnel and equipment safety, always check the marks on the product and comply with the instructions stated on them during installation, operation, and maintenance.

Marks on the Product	Description
	External protective grounding terminal.
	Disconnect the equipment from all external power sources before maintenance!
	Danger to life due to high voltages! Only qualified personnel can open and maintain the equipment.
	CE mark of conformity. EU/EEA Importer.
	Do not dispose of the device together with household waste.
	Read the user manual before maintenance!
	Burn danger due to the hot surface that may exceed 60°C.
	TÜV mark of conformity.
	Regulatory compliance mark.
	PTB mark of conformity.

2.5 Indicator Lights

There are two types of indicator lights on the cabinet: the indicator light strip and the starry power ring indicator. The indicator light strip is used to indicate the status of the charging connectors, with the left and right connectors controlled independently; the starry power ring indicator is used to indicate the status of the entire charger.

Table 2-1 Indicator Lights Description

Indicator Light Type	Light Status	Charger Status	Remarks
Charging connector indicator light strip	Steady green	Connector in standby	Normal
	Blue breathing	Charging in progress	Normal
	Steady blue	Fully charged	Normal
	Steady red	Fault	Abnormal
	Green light flashing	Reserved	Normal
Starry power ring indicator (charging indicator)	Blue light flashing	Card reading in progress	Normal
	Steady blue	Charger operating normally	Normal
	Steady red	Charger fault	Abnormal

2.6 Charging Connector Cable Management System

The standard length of the charging connector cable is 5 meters or 7 meters (optional), with actual working radii of 4 meters and 6 meters, respectively, as shown in the figure below:

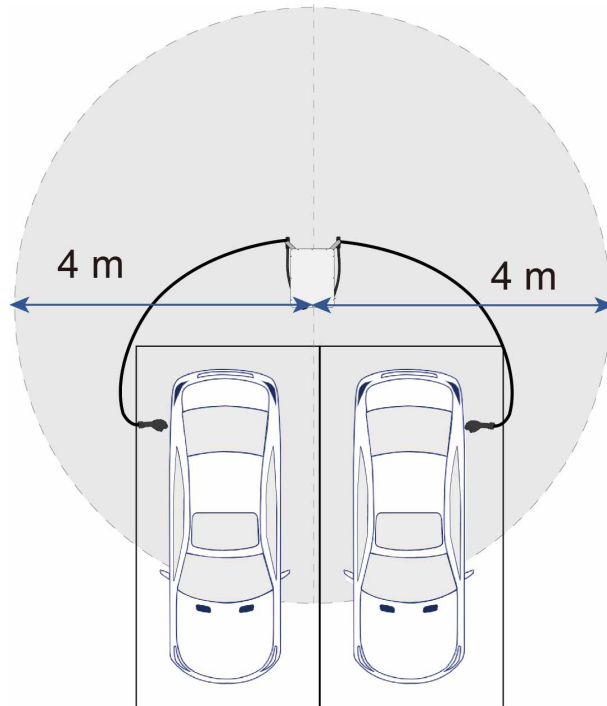


Figure 2-1 Actual working radius of a 5-meter charging connector cable

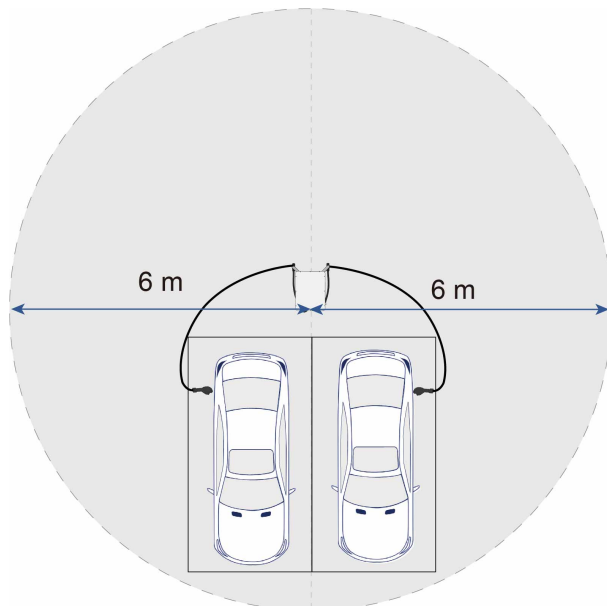
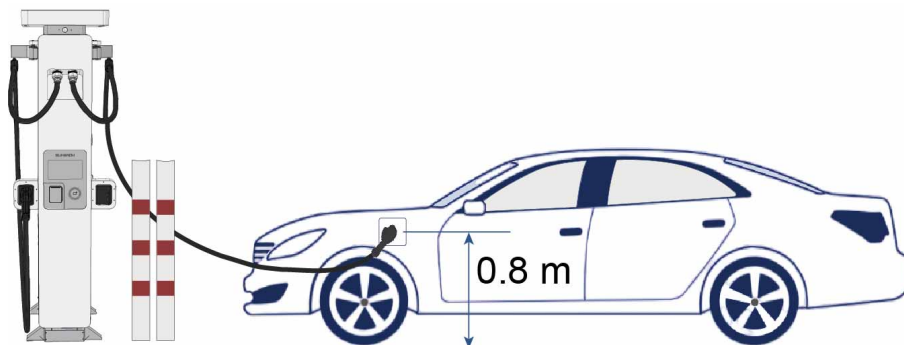


Figure 2-2 Actual working radius of a 5-meter charging connector cable



There should be no sharp objects within the cable's working radius to prevent damage to the insulation and ensure normal operation.

The working radius is calculated based on the electric vehicle charging port being 0.8 meters above the ground.



- The charging connector cable management system effectively protects the cable from damage caused by dragging on the ground.
- It is designed for standard 5-meter charging connector cables. If the cable length exceeds 5 meters, part of the cable may drag on the ground.

3 Mechanical Mounting

3.1 Installation Requirements

3.1.1 Installation Environment Requirements

The charger must be installed in an environment that meets the following requirements:

- The installation area must be free from flammables and explosives.
- Do not install the equipment in areas with corrosives such as corrosive gases and organic solvents.
- The installation and operating location should be free from strong vibrations, impacts, and electromagnetic interference. The external magnetic field strength must not exceed 0.5 mT.
- The installation area must not contain explosion hazards, hazardous gases or conductive media that could damage metal or insulation.
- Do not install the equipment in dusty and smoky environments.
- Install the equipment in a sheltered location to avoid exposure to direct sunlight or severe weather (e.g., snow, rain, and lightning). If installed in direct sunlight, the equipment may experience a power reduction due to high-temperature self-protection.
- Ensure adequate ventilation and heat dissipation. Install the equipment in a well-ventilated environment.
- Install the equipment at least 30 m away from third-party wireless communication facilities and residential areas.
- Install the equipment in a location with suitable temperature and humidity. Operating ambient temperature: -35°C to +55°C. Relative humidity: 5%–95%.
- Ensure a stable 4G communication signal or a wired network interface with internet access.
- Provide convenient transportation access and reliable fire safety measures.
- Ensure the site area meets current needs and allows for future expansion throughout the equipment's full lifecycle.
- The soil on the installation site must have adequate compaction. Recommended: soil relative density $\geq 98\%$. If soil is loose, take measures to ensure foundation stability.
- Install the ultra-fast dispenser adjacent to the power cabinet. Cable run between power cabinet and dispenser: ≤ 50 m. Distance between power cabinet and upstream pad-mounted transformer: ≤ 100 m.

3.1.2 Installation Space Requirements

Single-Unit Installation

To ensure adequate heat dissipation and ease of maintenance, the minimum clearance between the equipment and any surrounding obstacles must not be less than the specified value.

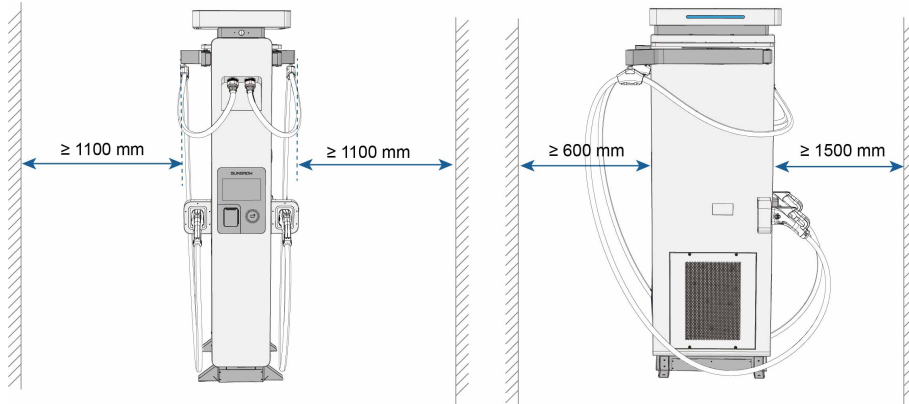


Figure 3-1 Installation Space Requirements

NOTICE

It is strictly prohibited to place any obstacles within the opening range of the equipment door.

To protect the equipment from direct sunlight, rain, and snow and extend its service life, it is recommended to install an EV charger canopy.

3.1.3 Foundation Requirements

NOTICE

- **The foundation must be planned according to the installation space requirements and base dimensions to meet both installation and operation & maintenance needs.**
- **Within the installation area, no obstacles should exceed the foundation level in height, as this could impede maintenance.**

Due to the equipment's significant weight, install it on a solid brick or concrete foundation to ensure stable operation. The foundation construction requirements are as follows:

- The soil at the installation site must have a certain density. It is recommended that the relative density of the soil be at least 98%. If the soil is loose, take necessary measures to ensure foundation stability.
- The bottom of the foundation pit must be compacted and leveled to provide adequate and effective support for the equipment.

- The foundation should be elevated above the surrounding ground level to prevent rainwater erosion of the equipment base and interior.
- The foundation's cross-sectional area and height must meet the specified requirements.
- Cable routing must be considered during foundation construction.
- Pre-bury cable conduits at the foundation bottom according to the equipment's location of the cable entry opening.
- A drainage system must be installed to prevent the equipment bottom or interior from being submerged in water during the rainy season or heavy rainfall.

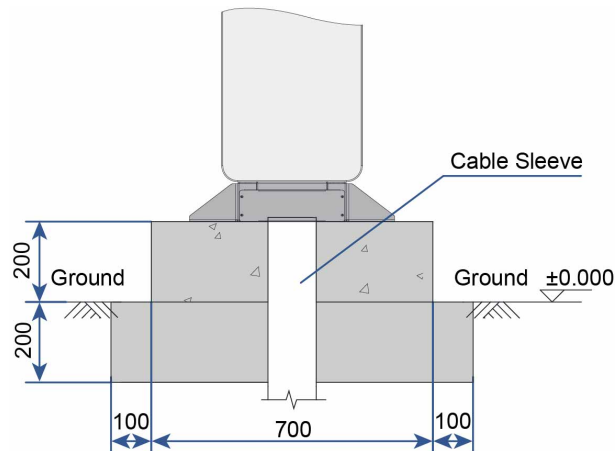


Figure 3-2 Foundation Dimensions (mm)

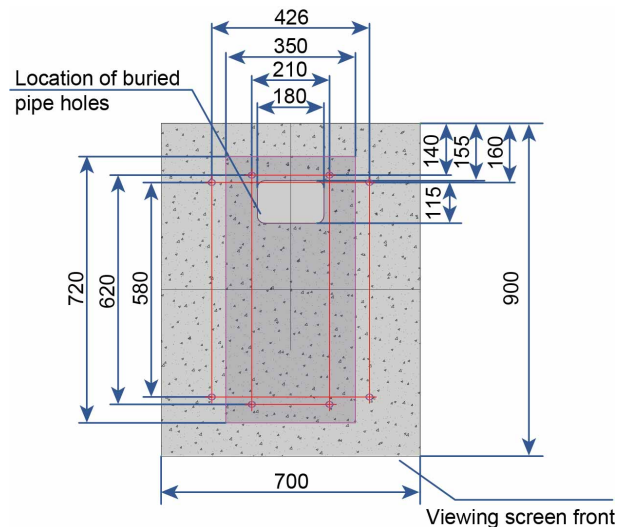


Figure 3-3 Foundation Top View (mm)

3.2 Preparation before Installation

3.2.1 Prepare Installation Tools

The installation tools include, but are not limited to, the following recommended tools. If necessary, other auxiliary tools can be used on-site.

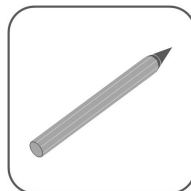
Installation tools



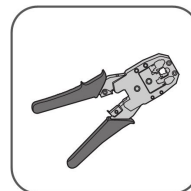
Phillips
screwdriver



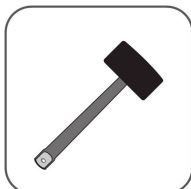
Hammer drill
($\phi 15$)



Marker pen



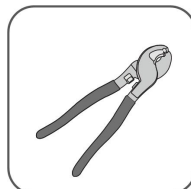
RJ45 crimping
tool



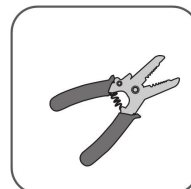
Rubber mallet



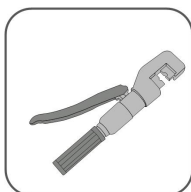
Socket set
(M6, M10, M12)



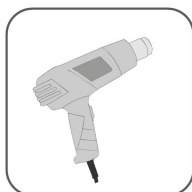
Wire cutter



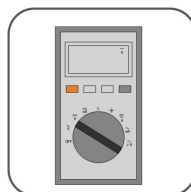
Wire stripper



Hydraulic
crimping tool



Heat gun



Multimeter



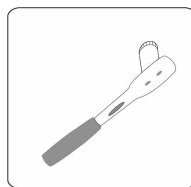
Vacuum cleaner



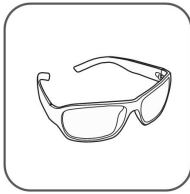
Assembly/
disassembly
wrench



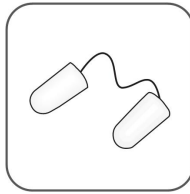
Adjustable wrench



Socket wrench

Protective tools

Goggles



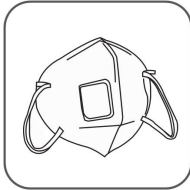
Earplugs



Safety shoes



Safety helmet



Dust mask

Electrical safety toolsAnti-static wrist
strap

Safety gloves

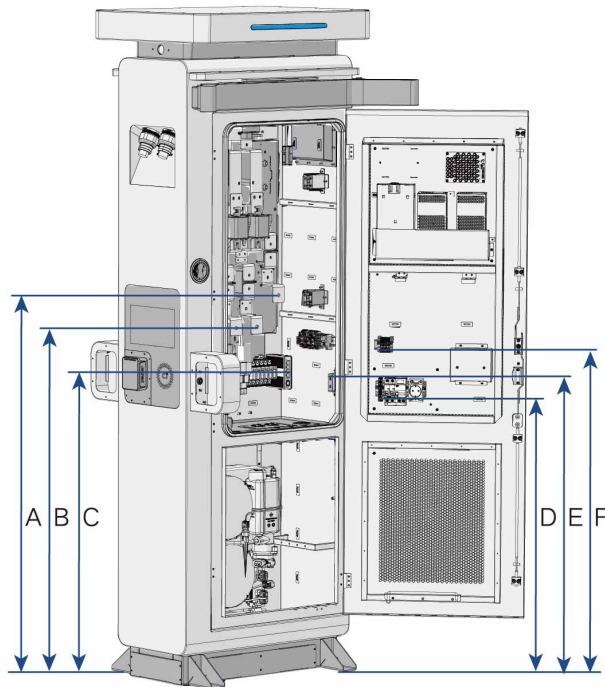
3.2.2 Lay Cables

Step 1 Route the cables along the pre-buried conduits, with one end at the cable entry/exit of the power cabinet foundation and the other end at the cable entry/exit of the dispenser foundation.



For the position and dimensions of the foundation cable entry/exit hole, refer to [3.1.3 Foundation Requirements](#)

Step 2 Reserve sufficient cable length according to the height of the terminal blocks.

**Figure 3-4** Wiring Height**Table 3-1** Height of Wiring Locations in the Cabinet

No.	Wiring Location	Height in the Cabinet (mm)
A	DC negative busbar	1235
B	DC positive busbar	1135
C	Switch port	978
D	Power supply terminal	941
E	Grounding copper bar	990
F	CAN terminal	1048

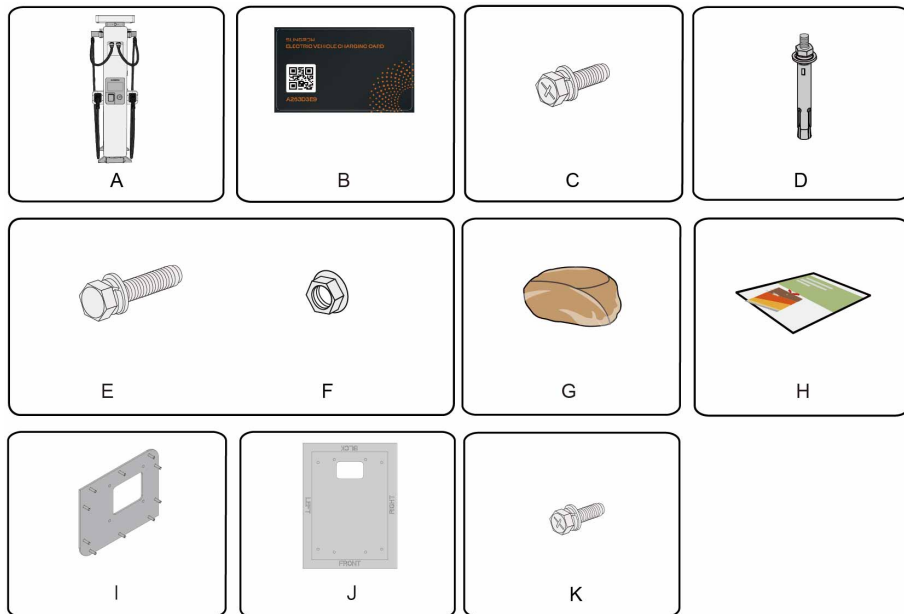
--End

3.3 Shipping Accessories

The equipment has undergone complete testing and strict inspection before leaving the factory. However, damage may still occur during transportation. Please perform a thorough inspection before installing the product.

- Check the packaging for damage.

- Unpack and check if all internal devices are intact and undamaged.
- If tools are used for unpacking, handle them carefully to prevent damage to the equipment.



No.	Name	Quantity	Description
A	SC800E-L2	1	Ultra-fast dispenser
B	RFID card	2	Used for card-based charging
C	M8×16 bolt assembly	1	Used to secure the grounding cable between the dispenser and the power cabinet
D	M12×100 expansion bolt	8	Used to secure the dispenser and foundation
E	M10×30 bolt assembly	4	Used to secure DC cables
F	M10 flange nut	4	Works with M10×30 bolts to secure DC cables
G	Firestop putty	4	Used to seal the bottom cable entry/exit holes of the dispenser
H	Documentation	-	Includes quick installation guide, certificate of conformity, warranty card, and packing list

No.	Name	Quantity	Description
I	Credit card reader mounting plate		Used to install the credit card reader
J	Mounting template	1	Used to locate foundation drilling positions
K	M4×12 bolt assembly	4	Used to secure the credit card reader to the mounting plate

If any items are damaged or missing, do not install the equipment. Contact the shipping company or Sungrow Power Supply Co., Ltd. immediately, and provide photos of the damage for further assistance.

3.4 Install Cabinet

3.4.1 Drill Foundation Holes

When installing the cabinet, holes must be drilled in the foundation, and the cabinet should be securely fixed using expansion bolts.

Prerequisite

Prerequisites:

- The foundation has been constructed strictly according to the foundation drawing.
- The cables have been laid.

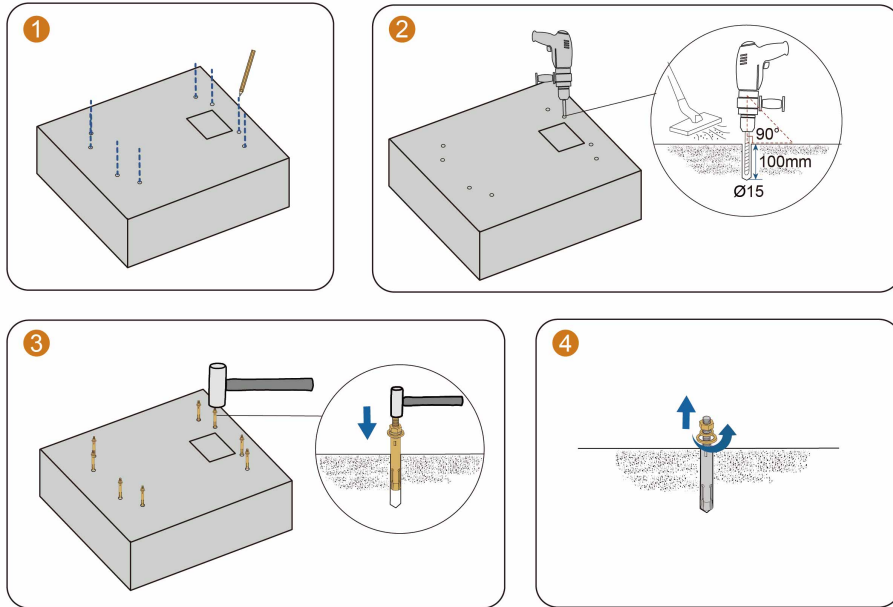
Step 1 Prepare the foundation according to [3.1.3 Foundation Requirements](#).

Step 2 Take the mounting template from the shipping accessories, place it on the foundation level, and align it so that its orientation matches the foundation. Using the holes on the mounting template as a guide, mark the expansion bolt drilling positions on the foundation with a marker.

Step 3 Use a hammer drill to drill holes at the marked positions. The hole diameter should be Ø16 mm and the depth should be 100 mm.

Step 4 Pre-tighten the expansion bolt, insert it vertically into the drilled hole, and tap it with a rubber hammer until the expansion sleeve is fully inserted into the hole.

Step 5 Unscrew the bolt, remove the flat washer and spring washer, and store them properly for later use.



--End

3.4.2 Transport Cabinet

3.4.2.1 Transport Using Crane

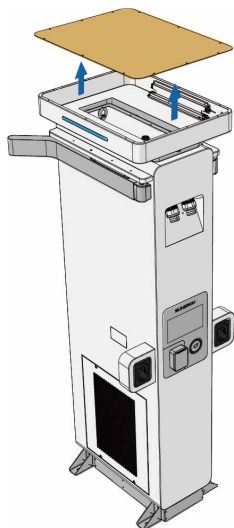
Transport requirements

If a crane is used for moving the cabinet, please read the following precautions carefully:

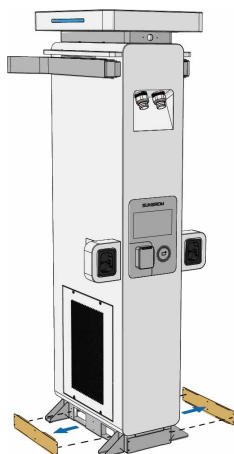
Tools

Name	Requirements	Provided By
Crane	Crane load capacity ≥ 1000 kg.	User
Lifting sling	≥ 2 , each with a load capacity ≥ 500 kg. Length from lifting ring to crane hook ≥ 600 mm.	User

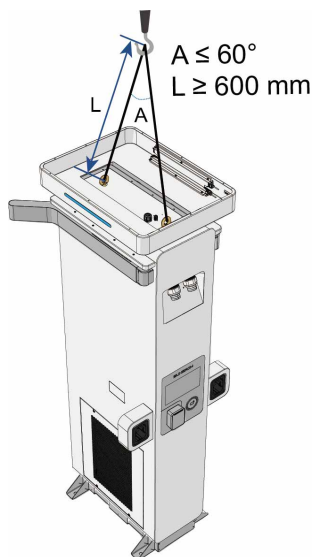
Step 1 Remove the top cover from the cabinet.



Step 2 Remove the panels on both sides at the bottom of the cabinet.



Step 3 Secure the steel wire ropes to the lifting rings on the top of the cabinet as shown in the figure.



Step 4 Lift the equipment vertically at a constant speed, keeping the charger stable and level.

Step 5 When the equipment is approximately 100 mm above the ground, pause and check that the lifting gear is securely connected and that the load is evenly distributed across all lifting points.

Step 6 Move the equipment above the foundation, then lower it steadily, ensuring that the expansion bolt holes at the bottom of the cabinet are aligned with the expansion bolts on the foundation.

Step 7 Once the power cabinet is fully seated on the foundation, remove the steel wire ropes.
--End

3.4.2.2 Handle with Forklift

Requirements for Handling

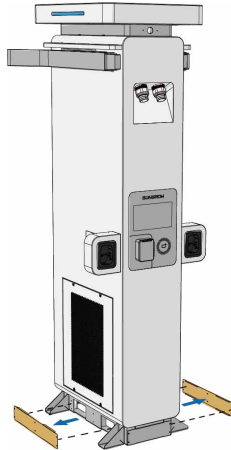
If you plan to move the cabinet with a forklift, please read the following notes carefully:

- Use only specialized forklifts operated by qualified personnel.
- The forklift's load capacity must meet the equipment's specifications.
- Ensure the moving path is free of obstacles, slopes, or uneven terrain.

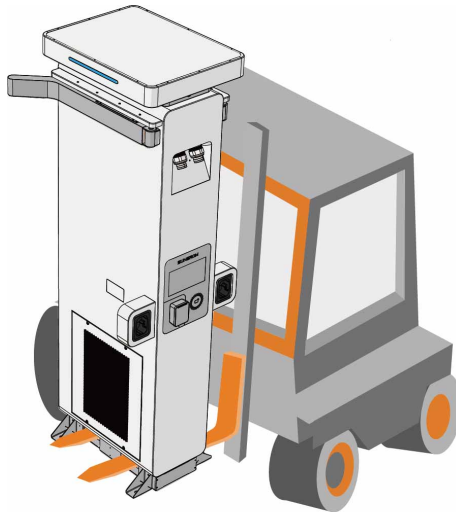
NOTICE

- **Always pay attention to the equipment's center of gravity.**
- **A forklift with a load capacity of 1000 kg is recommended.**

Step 1 Remove the side plates from the bottom of the cabinet.



Step 2 Adjust the forklift's fork spacing and height, then slowly drive forward until the forks are fully inserted under the charger.



Step 3 Slowly lift the cabinet and move at a constant speed to the foundation area.

Step 4 Adjust the forklift height to align the cabinet's anchor bolt holes with the foundation bolts.

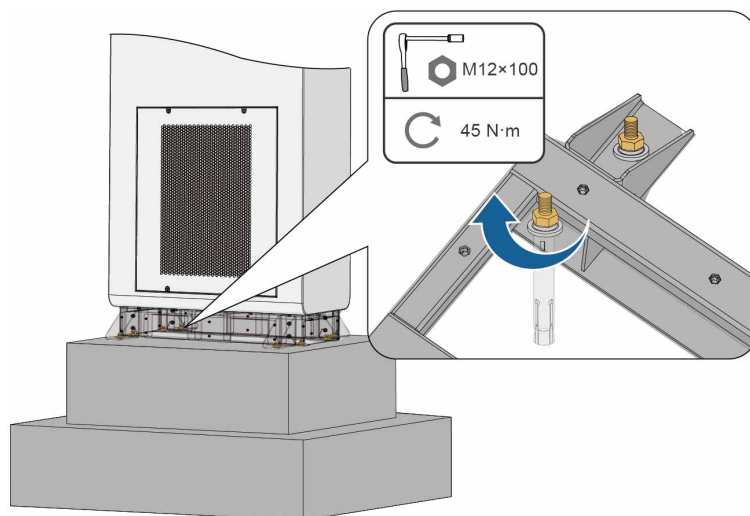
Step 5 Once the charger base is fully seated on the foundation, slowly withdraw the forks.

--End

3.4.3 Secure Cabinet

Step 1 Use a forklift or crane to move the equipment to the foundation; refer to [3.4.2 Transport Cabinet](#) for details.

Step 2 Attach the flat washer, spring washer, and nut onto the expansion screw in sequence, then tighten with a socket wrench. An S10 (M12) socket wrench is recommended.



--End

4 Electrical Connection

4.1 Preparation Before Connection

To ensure safe and standardized cable connections for the charger, and to avoid personnel hazards and compliance risks, complete the following preparatory steps before proceeding with formal cable connections. Only proceed to the subsequent connection procedures after confirming that all preparatory items are correct.

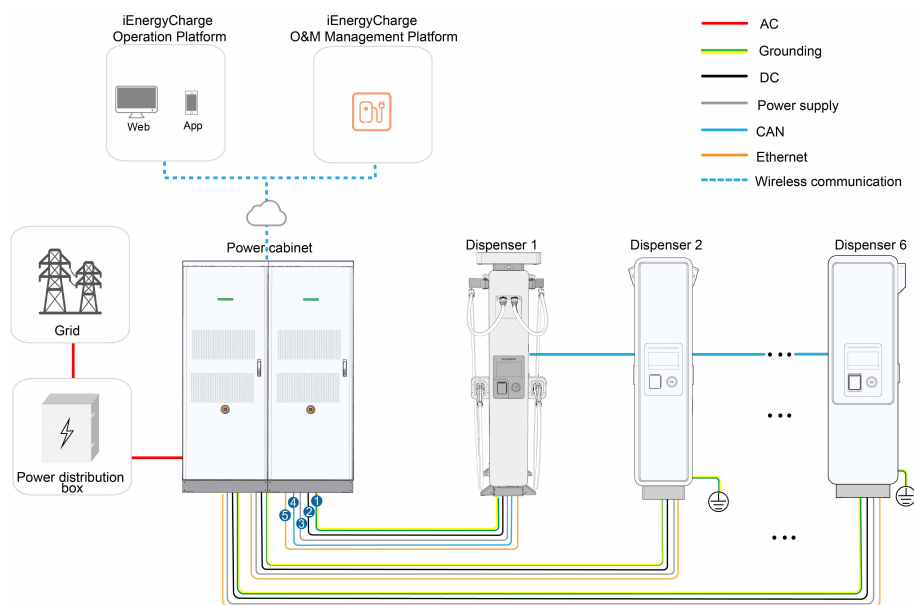
DANGER

Before making any electrical connections, ensure that the equipment and all connected switches are set to "OFF" and cannot be accidentally re-energized. Failure to do so may result in electric shock.

- Use upstream circuit breakers that are either 3P molded case circuit breakers without residual current protection or 3P+N molded case circuit breakers with residual current protection.
- Refer to the cable requirements in this manual. Verify that the cable specifications meet the wiring requirements, and ensure that the cables have been properly laid in pre-embedded conduits or cable trays.
- Open the cabinet door and use a screwdriver to remove the protective plate in front of the operation panel. Ensure that the wiring terminals are unobstructed to facilitate the connection work. Store the removed protective plate and screws properly for later use.
- Clear the work area to ensure sufficient operating space, keep it free of obstacles, and remove all flammable or explosive materials.
- Refer to the tool requirements in this manual and prepare the appropriate connection tools.

4.2 Cable Requirements

Before making any electrical connections, prepare the cables, terminals, and SIM cards. The cables include grounding cables, DC cables, power cables, and communication cables.



Cable specifications

The cables required during installation need to be prepared by the user. For cable specifications, refer to the table below.

Table 4-1 Cable Specifications

No.	Cable Name	Type	Cross-sectional Area	Crimp Terminal Specifications
1	Grounding cable (power cabinet to dispenser)	Outdoor single-core cable	Copper wire: 180 mm ² Aluminum wire: 240 mm ²	Copper wire: SC180-8 Aluminum wire: SC240-8
2	DC cable	Outdoor single-core cable Voltage rating: ≥ 1 kV	Copper wire: DC+: 4×120 mm ² DC-: 4×120 mm ² Aluminum wire: DC+: 4×240 mm ² DC-: 4×240 mm ²	Copper wire: SC120-10 Aluminum wire: SC240-10
3	Power cable	Two-core power cable	2×1.5 mm ²	E1510
4	CAN cable	Shielded twisted pair	2×0.75 mm ²	E1510

No.	Cable Name	Type	Cross-sectional Area	Crimp Terminal Specifications
5	Network cable	F/UTP Cat5e cable	—	—



- The cable specifications listed in this manual are for reference only. Users must select appropriate cables based on actual conditions and ensure compliance with local regulations and safety standards.
- To prevent equipment failure caused by wiring errors, it is recommended to clearly label both ends of each cable (e.g., with adhesive labels) before installation, and to carefully verify all connections before and after wiring.

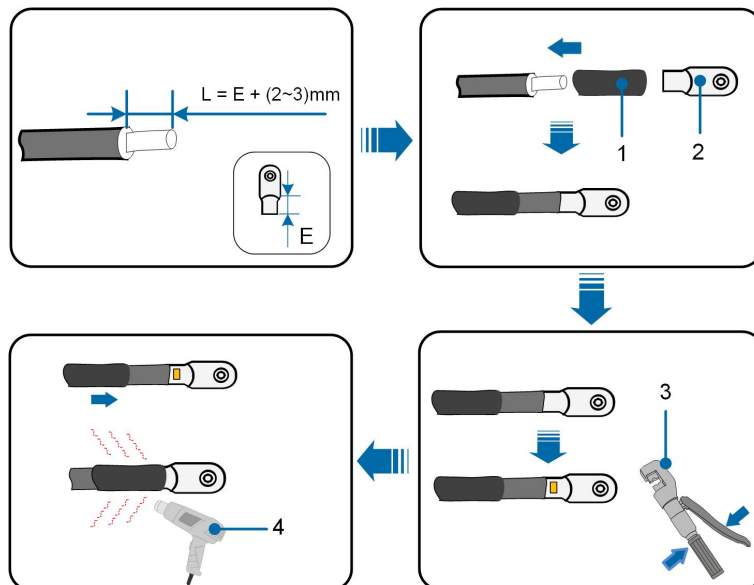
After passing the cable through the AC inlet hole, the cable must be properly crimped to ensure a reliable connection between the cable and the terminal. Poor contact may result in overheating or even safety hazards.

Copper conductors are recommended for all connections. If aluminum conductors are used, copper-aluminum transition terminals must be employed to prevent direct contact between the copper busbar and aluminum conductors.

4.3 Wiring Terminals Preparation

4.3.1 SC Terminal Crimping

Crimp Terminal



- | | |
|------------------------|-----------------|
| (1) Heat shrink tubing | (2) SC terminal |
| (3) Hydraulic pliers | (4) Heat gun |



Before crimping, slide the heat shrink tubing over the crimping area to ensure complete coverage. After crimping, heat the tubing evenly with the heat gun until it fits snugly around the terminal. Ensure that the connection is safe and reliable without loosening, oxidation, or short circuits.

Aluminum Wire Requirements

If aluminum wires are used, use copper-aluminum bimetallic terminals to avoid direct contact between the copper busbar and the aluminum wire.

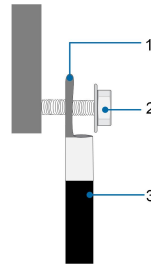


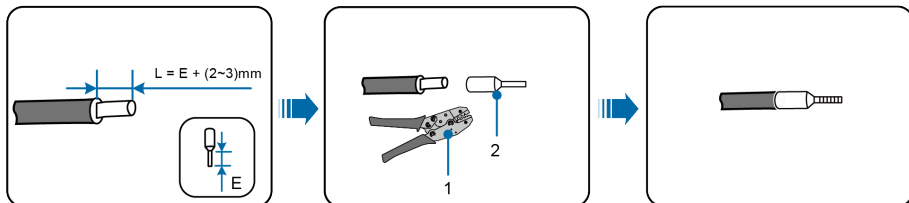
Figure 4-1 Aluminum Wire Terminal Connection Sequence

- | | | |
|---|---------|-------------------|
| (1) Copper-aluminum
bimetallic terminals | (2) Nut | (3) Aluminum wire |
|---|---------|-------------------|

NOTICE

- Ensure that the selected terminal can directly contact the copper busbar. Contact the terminal manufacturer if you have any concerns.
- Ensure that the copper busbar is not in direct contact with the aluminum wire. Otherwise, electrochemical corrosion may occur, impairing the reliability of the electrical connections.

4.3.2 Crimp Cord-end Terminal



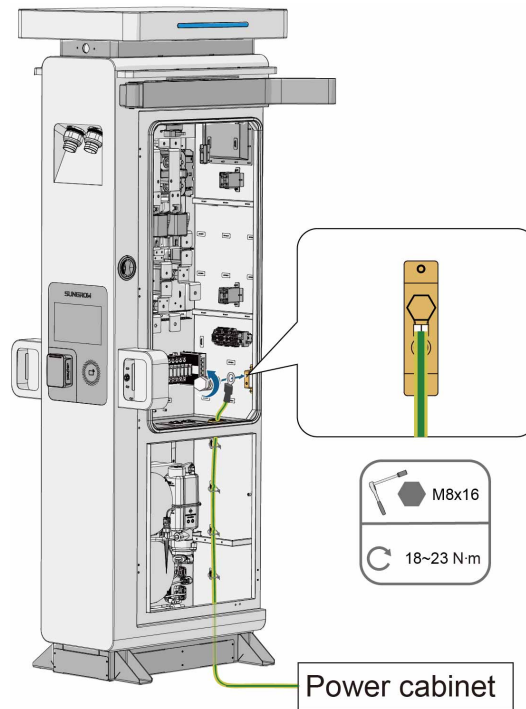
(1) Crimp tool

(2) Cord-end terminal

4.4 Dispenser Grounding Cable Connection

Connect a grounding cable between each dispenser and the power cabinet to establish a common ground connection.

- Step 1** Fabricate the grounding cable and crimp terminals (see [4.3.1 SC Terminal Crimping](#) for details).
- Step 2** Route the prepared grounding cable through the foundation conduit to the dispenser's bottom cable entry opening.
- Step 3** Using a wrench, connect the grounding cable to the grounding terminal block as shown in the diagram.
- Step 4** Connect the other end of the grounding cable to the power cabinet.



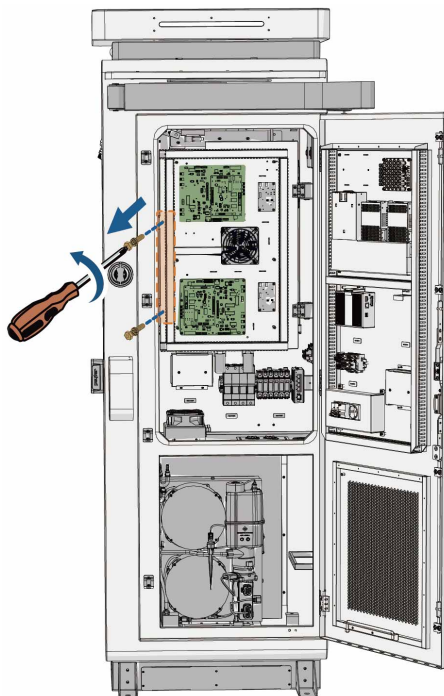
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4.5 Connect DC Cables

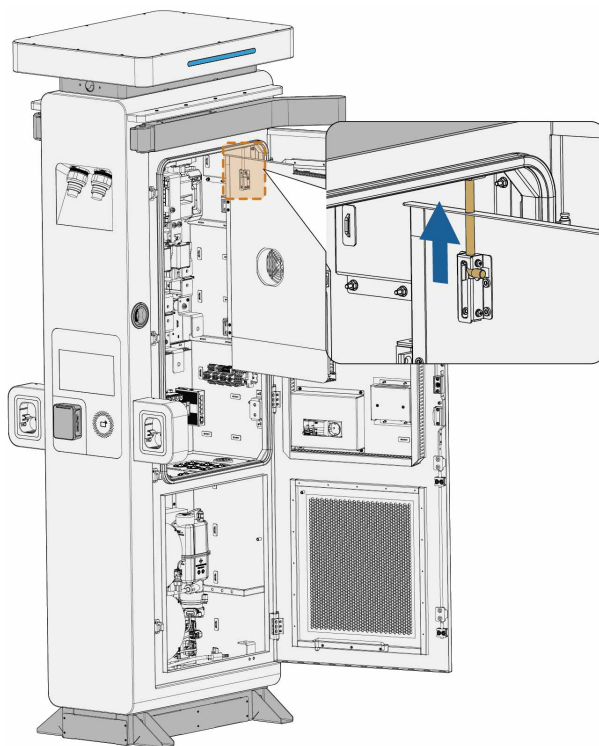
- Step 1** Open the cabinet door and remove the protective plate to expose the internal access door. Use a screwdriver to remove the two fixing screws on the access door.



Store the removed protective plate and screws properly for later use.

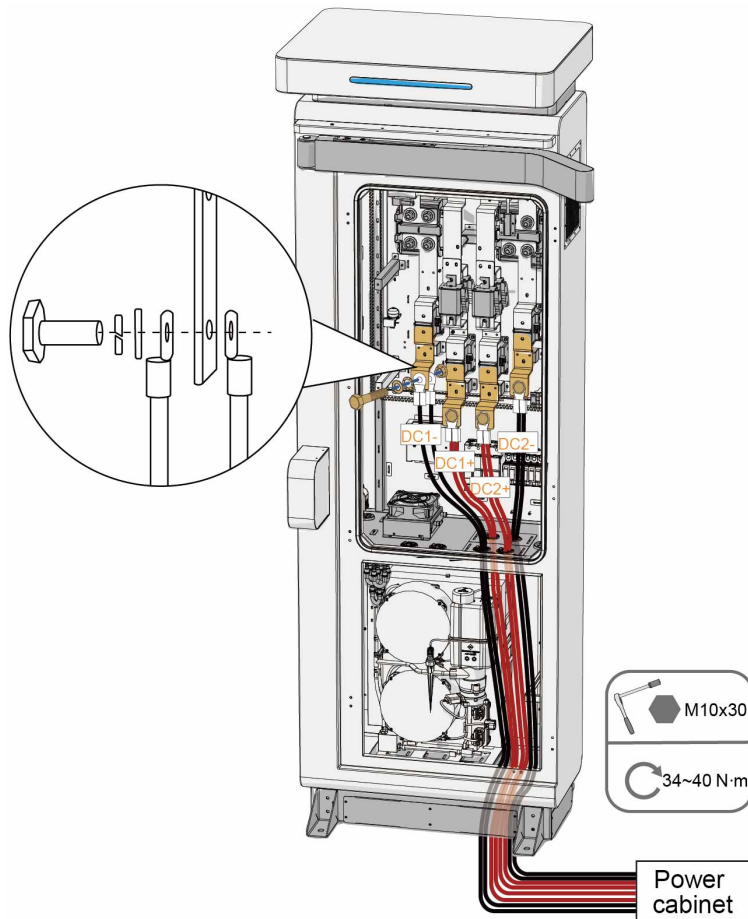


Step 2 Open the access door to 85°, and secure it with the locking pin above the door until it is firmly in place.



The mapping between the DC cables of the liquid-cooled dispenser and the DC terminals of the power cabinet is shown below. Connect the cables correctly as required.

- Step 3** Prepare the DC cables and crimp the terminals. For details, see [4.3.1 SC Terminal Crimping](#).
- Step 4** Route the DC cables from the foundation conduit to the dispenser's bottom cable entry hole.
- Step 5** Use a wrench to connect the DC cables to the corresponding terminals.
- Step 6** Route the other end of the DC cables into the power cabinet's cable entry hole and secure them to the corresponding DC terminals.



⚠ CAUTION

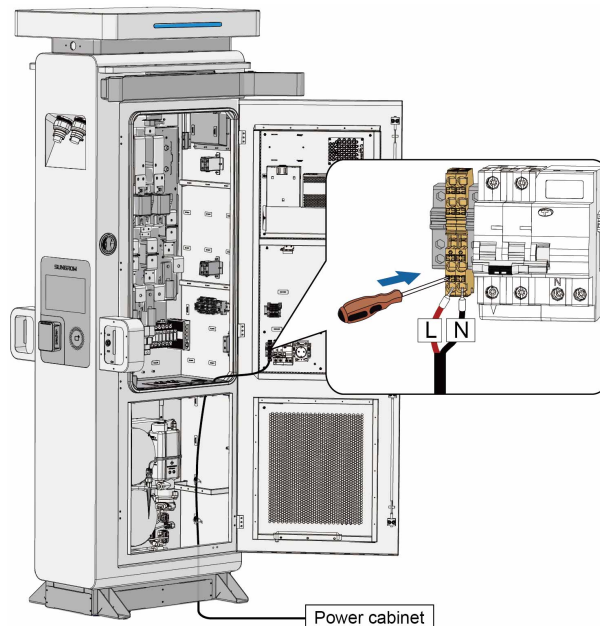
Ensure that the positive and negative DC cables are correctly matched; otherwise, the equipment may not operate properly.

--End

4.6 Power Cable Connection

The power cabinet connects to the dispenser via a power cable to supply power.

- Step 1** Fabricate the communication cable and crimp cold-press terminals (see [4.3.2 Crimp Cord-end Terminal](#) for details).
- Step 2** Route the prepared power cable through the foundation conduit to the dispenser's bottom cable entry opening, then connect to the power supply wiring terminal.
- Step 3** Connect the other end of the power cable to the power supply wiring terminal on the power cabinet.

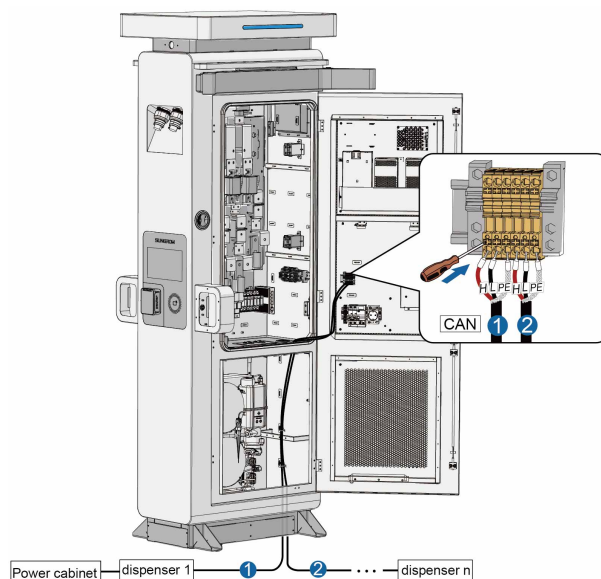


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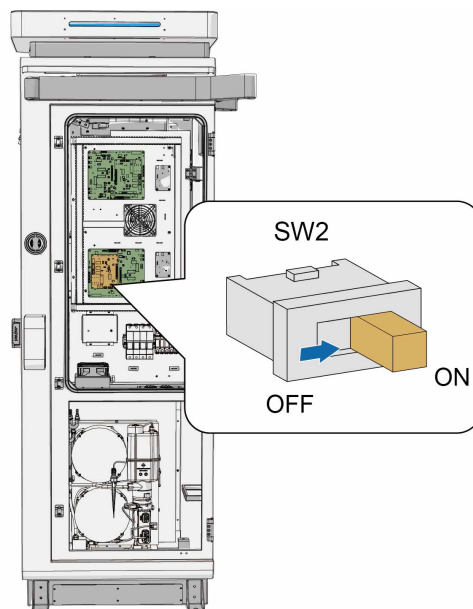
4.7 CAN Cable Connection

The power cabinet is connected to the dispenser via a CAN cable to enable communication between the power cabinet and the dispenser.

- Step 1** Fabricate the communication cable and crimp cold-press terminals (see [4.3.2 Crimp Cord-end Terminal](#) for details).
- Step 2** Route the prepared communication cable through the foundation conduit to the dispenser's bottom cable entry opening, then connect to the CAN interface.
- Step 3** Connect the other end of the CAN cable to the CAN interface of the power cabinet or another dispenser using a daisy-chain connection.



If the dispenser is located at the end of the CAN communication chain, set the DIP switch on the CAN communication board to **ON**.



NOTICE

Always connect the CAN shield wire. Otherwise, communication errors may occur.

--End

4.8 Communication Interfaces

The charging management platform is a cloud platform incorporating functions of monitoring, operation, and management. Users can manage and maintain their devices on this platform, with functions such as charging authorization, order management, and remote fault troubleshooting. The device communicates with the charging management platform over the OCPP protocol. OCPP (Open Charge Point Protocol) defines the protocol standard for network interconnection between the charger and the charging management platform.

Table 4-2 Hardware Interfaces

Interfaces	Visible	Default Status	Use Case
Ethernet interface	Y	Enable	Network Communication
NFC interface	Y	Enable	Card-swiping charging

Table 4-3 Supported Communication Protocols

Protocols	Description
HTTP+TLS	connect with power cabinet

Ethernet communication is recommended. The parameters required for each type of network connection are detailed in the table below.

Table 4-4 Supported Network Connection Methods

Communication Method	Technical Data	Connection Method
Ethernet	Rate (Mbit/s): 10/100 self-adaptive	Ethernet port

During high network traffic conditions, the device will enter a protection mode and activate rate limiting measures. There are three types of protection mechanisms:

- IP-Based request rate limiting
Each accessing IP address is assigned a separate token bucket. Up to 10 tokens are replenished per minute, with a maximum capacity of 60 tokens. Each API request consumes one token. Once the tokens are depleted, any further requests from that IP will be directly rejected.
- Global request rate limiting
The system maintains a global token bucket to limit the total number of requests from all IP addresses. The global limit is set at 200 requests per minute. Any requests exceeding this limit will be uniformly rejected to prevent system overload.
- IP blacklisting mechanism
If an IP address repeatedly triggers request denials within a short period (i.e., continues sending requests after exhausting its tokens), the system will blacklist the IP. While

blacklisted, the IP address will be denied access to all API endpoints for 5 minutes. After the ban period ends, the system will automatically remove the IP from the blacklist, allowing access to resume.



Network Traffic Monitoring Panel Overview

- Start/Stop toggle: Activates or halts network monitoring.
- Monitoring indicator (green): Indicates that network monitoring is active.
- Update interval: Sets the refresh interval for the displayed data.
- Black terminal window: Displays real-time connection and traffic statistics for the current network interface (e.g., wlo1).
- Host name (port/service if enabled): Displays the hostname or IP address of the connected devices.
- => / <= Symbols: Indicate the direction of data transmission (send/receive).
- Last 2 s / 10 s / 40 s: Shows the amount of data transmitted in the past 2, 10, and 40 seconds, respectively.
- Cumulative: Displays the total traffic since monitoring activation.

Hereby, Sungrow Power Supply Co., Ltd. declares that this radio equipment is in compliance with Directive 2014/53/EU.

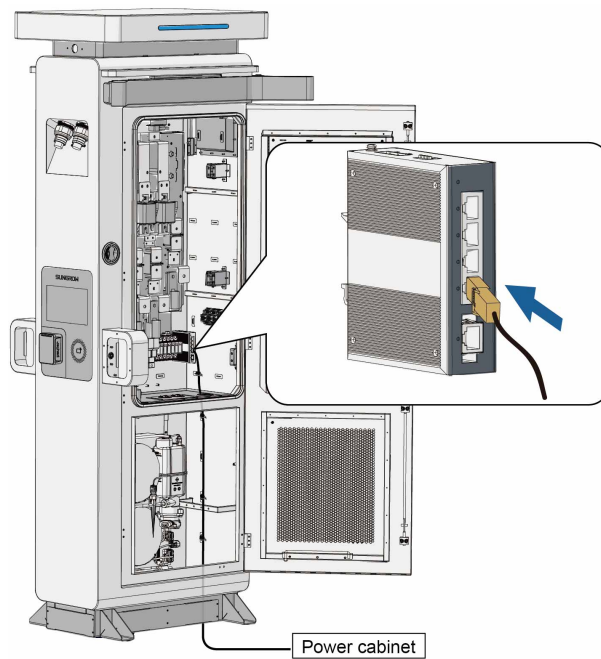
4.9 Ethernet Cable Connection

Each dispenser must be connected to the power cabinet via Ethernet cable for communication data transmission to the cloud platform.

Prerequisite

F/UTP Cat5e Ethernet cable is recommended, which must be provided by the user.

- Step 1** Open the cabinet door and locate the router's Ethernet port.
- Step 2** Route the Ethernet cable through the foundation conduit to the dispenser's bottom cable entry opening, then insert into the corresponding Ethernet port. A "click" sound and secure pull test indicate proper installation.
- Step 3** Connect the other end of the cable to the router interface on the power cabinet.



--End

5 System Configuration and Preparation

5.1 Add Coolant

Before the liquid-cooled dispenser runs for the first time, add coolant to the liquid cooling system.

Prerequisite

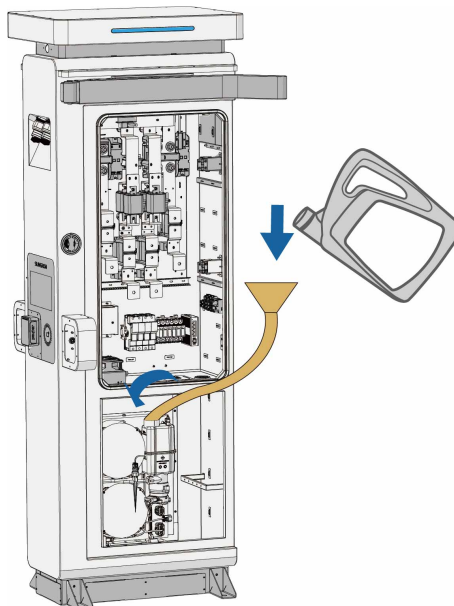
NOTICE

- To ensure compatibility with the cold source system, use the Shell E4 charging coolant included in the shipping accessories. Failure to use the specified coolant will cause leakage and material degradation. Wear protective gloves during operation.
- Do not mix different types of coolant, as this may damage the equipment. Sungrow will not be responsible for any issues arising from improper coolant use.
- Maintain the coolant level at the standard level (STD) ± 2 mm.

Step 1 Open the dispenser cabinet door and locate the cold source system at the bottom of the cabinet.

Step 2 Locate the liquid storage tank and open its lid.

Step 3 Insert the filling tube into the storage tank and slowly pour in the coolant at a uniform rate until the level reaches STD ± 2 mm.



Step 4 Remove the filling tube and tighten the tank cap.

NOTICE

During operation, the coolant level in the storage tank may drop and require replenishment. When replenishing, maintain the level at STD ± 2 mm.

Step 5 Check the cold source system to ensure there are no leaks.

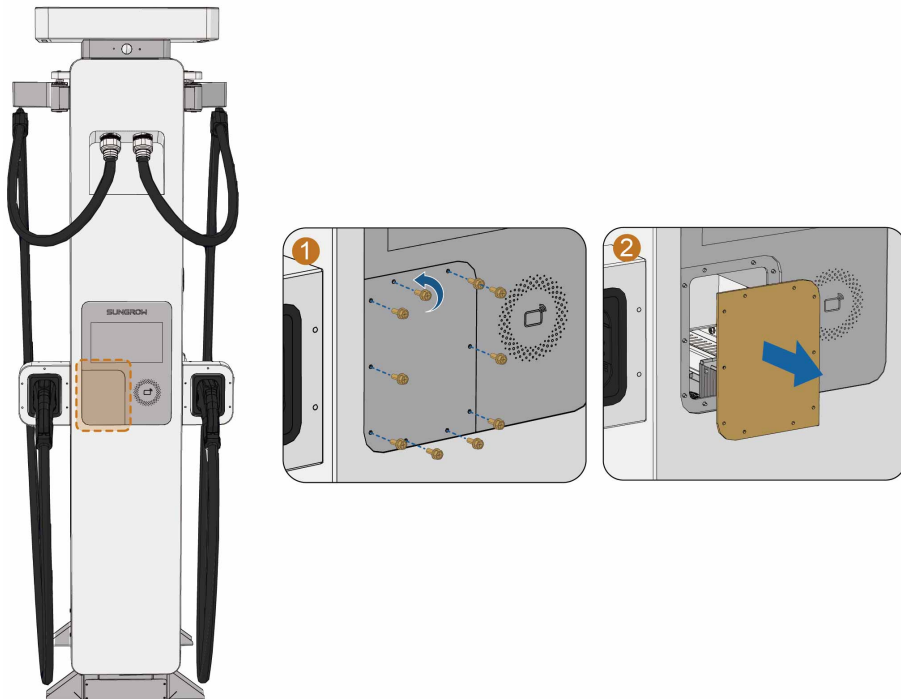
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5.2 Install Credit Card Reader

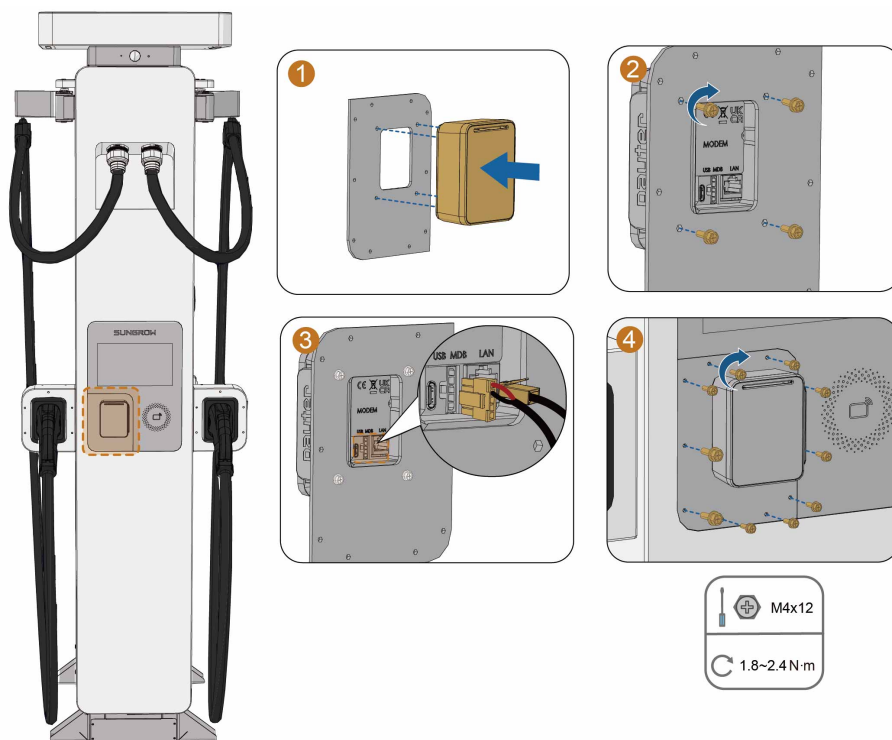


- If you need to use a credit card terminal, please contact SUNGROW for a separate purchase.
- This section applies only to the installation guide for the Payter Apollo model credit card terminal. For the installation of other models, please contact SUNGROW to purchase the corresponding installation accessories.

Step 1 Remove the cover plate in the area designated for the credit card terminal installation.



Step 2 Install the Payter card reader mounting plate from the shipping accessories and the separately purchased credit card terminal.



Step 3 Connect the reserved credit card terminal cable.

--End

6 Power-On and Commissioning

6.1 Inspection Before Power-on

To ensure safe operation, perform the following inspections before powering on the charger.

CAUTION

Do not energize the charger until all inspections are completed.

Table 6-1 Inspection Items

Item	Methods/Tools	Requirements
Appearance	Visual inspection	• No visible scratches or deformation on the enclosure. • No paint peeling on the equipment surface. • All cabinet parts and components are securely fastened, with clear nameplates and markings.
Environment	Visual inspection	• Equipment placement and surrounding space comply with design drawings. • Proper ventilation environment with no obstructions above or around the cabinet.
Charging connector	Visual inspection	• No water stains or foreign objects in the charging connector. • Charging cable is undamaged.
Electrical connection	Visual inspection/ Screwdriver	• All cable connections are securely fastened. • DC cable connections match the wiring diagram with no reverse connection or short circuit. • AC cable connections match the wiring diagram with correct phase sequence and no reverse connection or short circuit. • Grounding cables are securely connected with no short circuit. • Heat shrink tubing is applied at terminal-to-cable connections with no exposed conductors.

Item	Methods/Tools	Requirements
		Copper-to-aluminum terminals are used when connecting aluminum cables.
Maintainability	Visual inspection	- Cables are secured at the nearest tie points with cable ties—proper tension and consistent orientation. - Different cable types are separately bundled and labeled. - Cable routing allows easy access for maintenance.

6.2 Commissioning Steps

Ensure the equipment is correctly installed and all pre-commissioning checks are completed. Perform initial power-up commissioning before first use.

DANGER

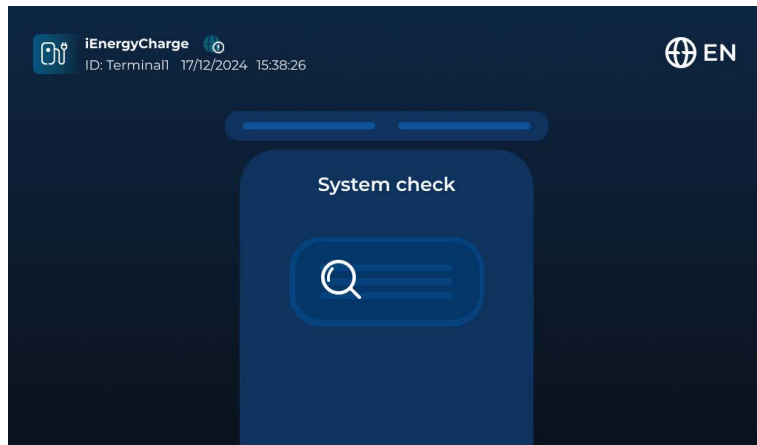
- Do not touch any live part of the product when it is running; otherwise, it may lead to electrical shocks.
- Do not touch any wiring terminal on the product when it is running; otherwise, it may lead to electrical shocks.
- Do not remove any part or component from the product when it is running; otherwise, it may lead to electrical shocks.

Step 1 Follow the power cabinet manual for power-on commissioning steps and power on the power cabinet.

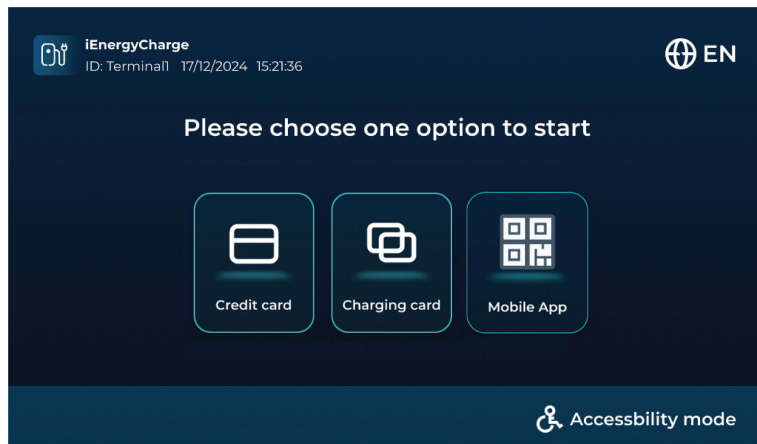
Step 2 Close the AC miniature circuit breaker of the dispenser.

Step 3 Close the cabinet door and observe the indicators: a steady green LED on the charging connector indicates standby mode; a steady blue light on the power ring indicates normal operation.

Step 4 Check the display, which will first show a self-test screen for about 30 s.



Step 5 After self-test, the display shows the charging mode selection screen. Users can choose a charging mode on this screen.



Step 6 For example, when selecting RFID card charging, the power ring indicator on the front of the dispenser flashes blue, waiting for card tap. Once a card is detected, the system verifies its validity. If successful, the display shows a confirmation screen.

Step 7 Take the charging connector and insert it into the vehicle's charging socket, ensuring a secure connection.

Step 8 After charging, return the charging connector to its holder to avoid exposure to heat, dirt, or moisture.



In an emergency, press the side-mounted emergency stop button to halt charging immediately.

--End

6.3 Post-commissioning Operations

Step 1 Refer to [9.3 Power off Equipment](#) to power off the power cabinet and dispenser.

Step 2 Push the cable entry block back to the appropriate position to minimize gaps in the cable entry/exit holes. This helps support the firestop putty and prevents it from falling.

Step 3 Take the firestop putty from the shipping accessories and use it to seal the gaps in the cable entry/exit holes.

NOTICE

- **Always use fireproof and waterproof materials, such as firestop putty, to prevent foreign objects or moisture from entering and affecting the long-term operation of the equipment.**
- **If the sealing putty has hardened, gently soften it with a heat gun before use.**

Step 4 Return the access door to its original position and secure it with the screws that were previously removed.

Step 5 Reinstall the protective plates onto the cabinet.

Step 6 Remove the limit rod, close all cabinet doors, and store the keys safely.



- Do not forcibly close the cabinet doors without first removing the limit rod or sliding rod.
- Before closing the cabinet doors, remove all items inside the equipment, such as installation tools, metal parts, and debris.

Step 7 Install the bottom panel of the cabinet and clean the work area.

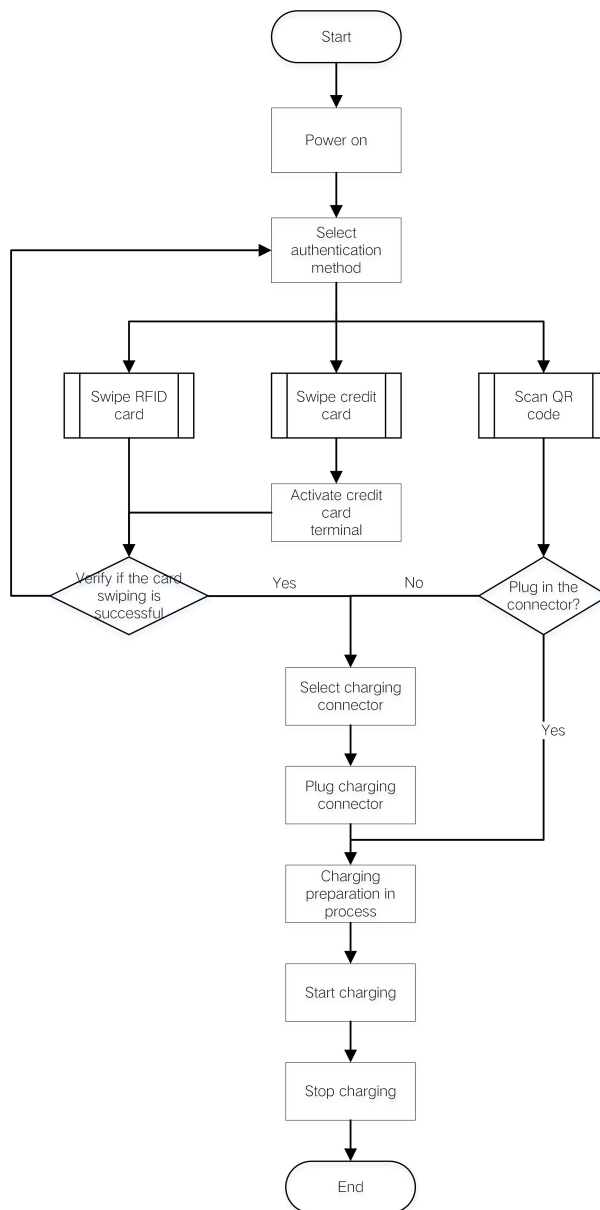
--End

7 LCD Touch Screen

7.1 Start Charging

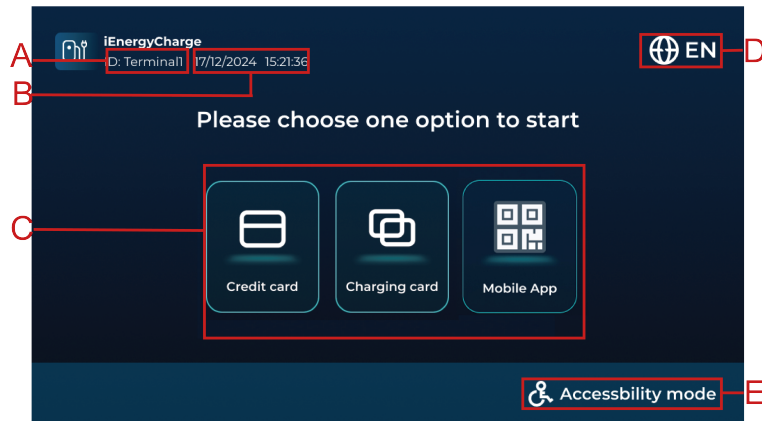
The touch screen is the human-machine interface, allowing users to perform various operations such as starting/stopping charging, viewing charging data, and diagnosing faults.

The charging process is shown in the flowchart below:



7.1.1 Select an Authentication Method

When the product is powered on, the system will run a self-check. After the system check is finished, the Authentication Method Selection Page will appear as shown below:

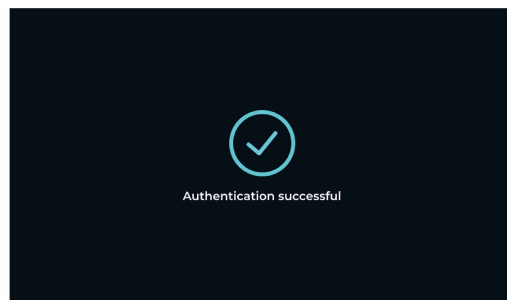


No.	Description
A	Product ID, a unique identifier for the product.
B	Current date and time.
C	Three authentication methods available: • Charging Card (RFID) • Credit Card • Mobile APP (iEnergyCharging Code) Choose one authentication method for each charging session.
D	Language switch button, used to switch between multiple languages, with English as the default.
E	Accessibility mode button, used to move down language options for easier access.

Choose your preferred authentication method.

Option 1: Charging Card (RFID)

Tap **Charging Card** and place the RFID card against the Energy Star-Ring (card reader). The system will verify its validity.

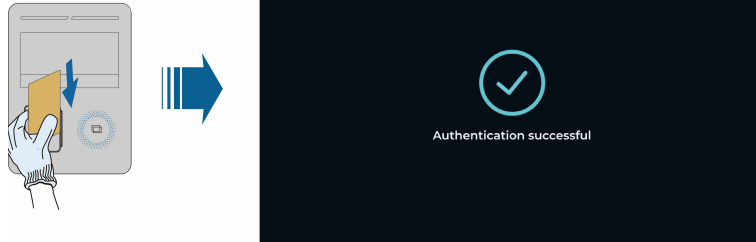


- If it is valid, the system will proceed to the Connector Selection Page. If the charging connector is already plugged in, the system will take you to the Charging Details Page directly.

- If verification fails, the card may not be activated or could be demagnetized. Tap **Back** and choose another authentication method.

Option 2: Credit Card

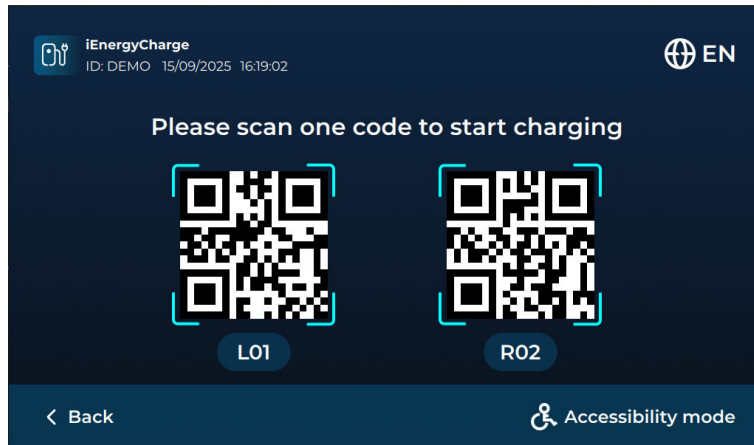
Tap **Credit Card** and place the credit card against the Credit Card Terminal.



- If it is valid, the system will proceed to the Connector Selection Page. If the charging connector is already plugged in, the system will take you to the Charging Details Page directly.
- If verification fails, the card may not be activated or could be demagnetized. Tap **Back** and choose another authentication method.

Option 3: Mobile APP (iEnergyCharge APP)

Tap **Mobile App** to begin. Open the iEnergyCharge mobile app and scan the QR code of the desired charging connector to go to the Connector Selection Page. If the charging connector is already plugged in, the system will take you to the Charging Details page directly.



7.1.2 Select Charging Connector

The charger is equipped with two charging connectors and they can be used at the same time. You can select one according to the connector status.

The status of the charging connector includes:

- Available: The connector is currently available and not connected to any EV.

- **Connected:** The connector is available and has been connected to the EV.
- **Occupied:** The connector is now occupied. For a charging connector in the "Preparing", "Charging", "Stopping", or "Complete" state, its status here will show as "Occupied" and it will not be available for use.
- **Unavailable:** The connector is currently not available. For a charging connector in the "Fault" and "Disable" state, its status here will show as "Unavailable" and it will not be available for use.

Step 1 Tap an RFID card or swipe a credit card. If the card is verified to be valid by the system, you will go to the interface for selecting a charging connector. The interface is shown below.

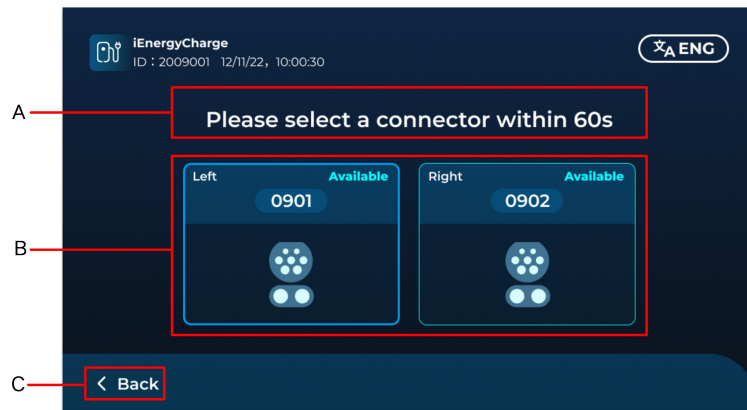


Table 7-1 Interface for Selecting a Charging Connector

No.	Description
A	A notice for users to select a connector within a certain period of time, with a countdown provided. After the countdown ends, the current charging session will be canceled and you will be directed back to the home page.
B	Shows the charging connectors and their status. The status of the charging connector includes: • Available: The connector is currently available, not connected to any EV. • Connected: The connector is available and has been connected to an EV. • Occupied: The connector is now occupied. In this case, the current charging power and the time spent in charging, in the format of HH:MM (hour:minute), will be shown on the screen. • Unavailable: The connector is currently not available.
C	Cancel the current charging session and go back to the interface for authentication method selection.

Step 2 You can select a connector that is "Available" or "Connected" before the countdown ends, and then go to the interface for plugging in the connector.

Step 3 If you want to quit selecting a connector before the countdown ends, tap **Back** to cancel the current charging session. You will then go back to the interface for authentication method selection.

Step 4 If you have not selected any connector when the countdown ends, the system will automatically cancel the current session and go back to the interface for authentication method selection.

--End

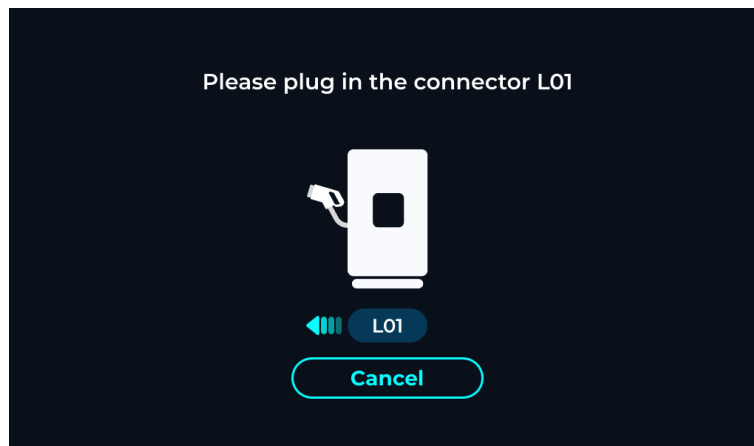
7.1.3 Plug Connector for Charging

NOTICE

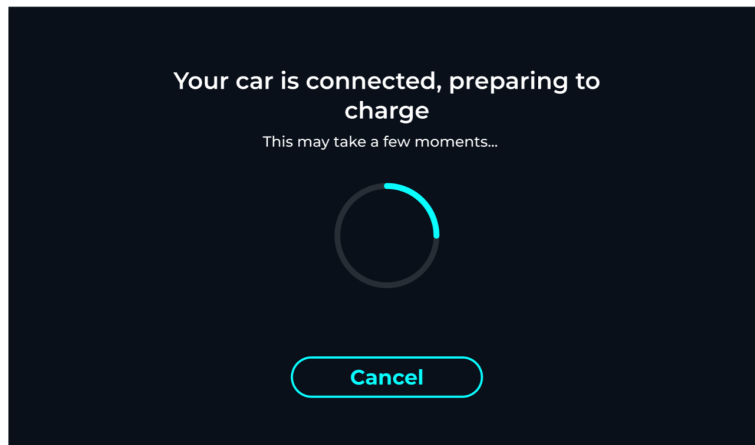
- **Plug or unplug the charging connector neatly at one go. Do not shake it.**
- **Do not bend or squeeze the charging connector, which may result in mechanical damage.**
- **Do not pull out the charging connector in the middle of a charging process.**

After selecting the connector, the screen will display the plug-in prompt.

- Tapping **Cancel** will exit the plug-in process and return to the Connector Selection Page.



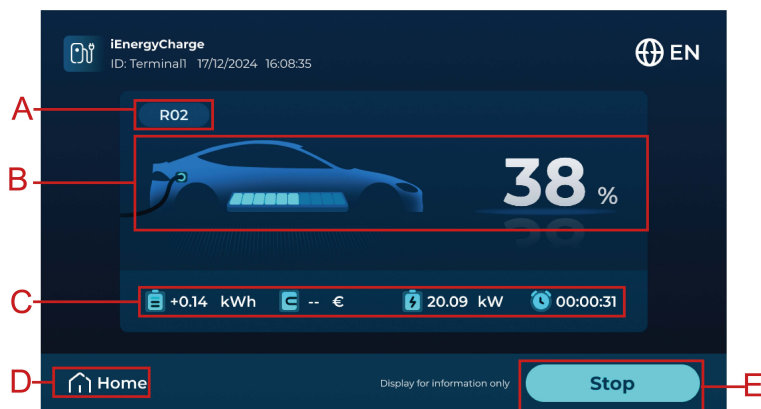
- If the connector is correctly plugged into the charging port of the EV, the Charging Preparation Page will appear. Tapping **Cancel** will abort the charging process.



If the connector is plugged in but the process takes too long and times out, the screen will return to the Connector Selection Page with a timeout message. Unplug the connector, reselect one, and plug it in again to restart the process.

7.1.4 View Charging Information

Once the charging preparation is complete, the EV starts charging, and the screen displays the charging details, as shown below:



No.	Description
A	Charging connector ID.
B	Progress of charging (%).
C	Charging details, including the charging power (kW), charging cost, power delivered (kWh), and time spent in charging (HH:MM:SS).
D	Home button. Tap this button to go to the home page without stopping the charging process.

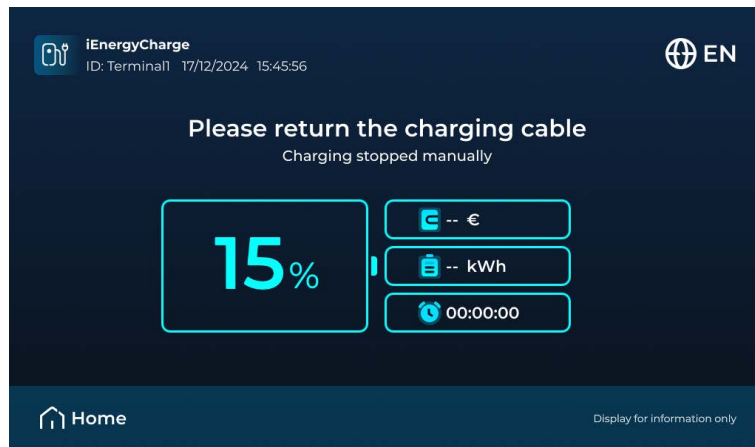
No.	Description
E	Stop button. Tap this button, confirm your action by swiping a card, and go to the interface to end the charging process.

7.1.5 Stop Charging

There are two ways to end charging: manually by the user during charging, or automatically by the system when the battery is full. After a charging session ends, the user must unplug the connector; otherwise, it will remain in "Complete" status and cannot be selected again.

Operation Procedures

Step 1 After the battery is full or charging is stopped manually, the screen displays the charging end screen interface, as shown below.



Step 2 Tap the **Home** button to return to the home page.

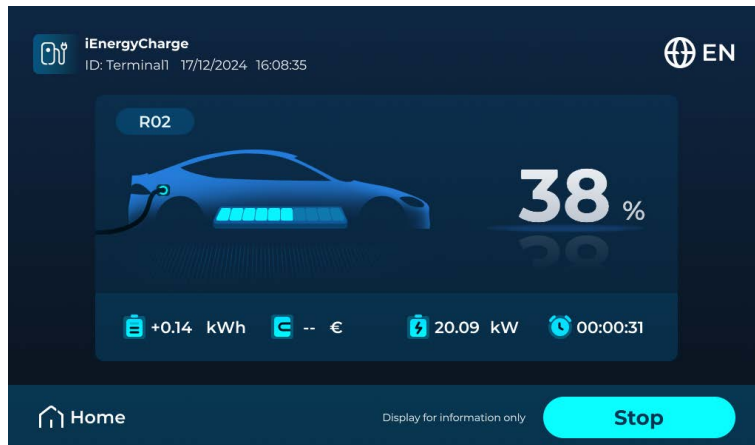
--End

7.2 Other Functions

7.2.1 Dual Charging

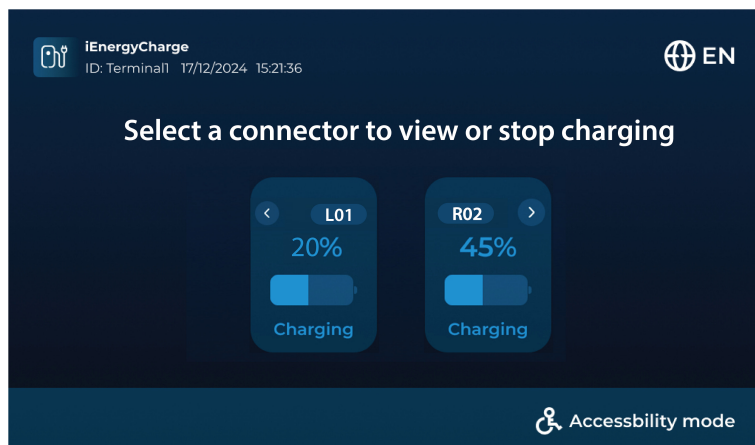
Dual Charging Setup

The product supports dual charging, allowing two charging connectors to operate simultaneously. When both connectors are available, after initiating charging with one connector, return to the Authentication Method Selection Page by tapping **Home** on the Charging Details Page. The other connector can then be set up for charging following the same steps. For further details, refer to [7.1 Start Charging](#).



Switching Between Charging Details

After charging has started with both connectors, you can switch between their charging details from either connector's Charging Details Page. Tap **Home** to access the Connector Selection Page, then tap the other connector to view its details.



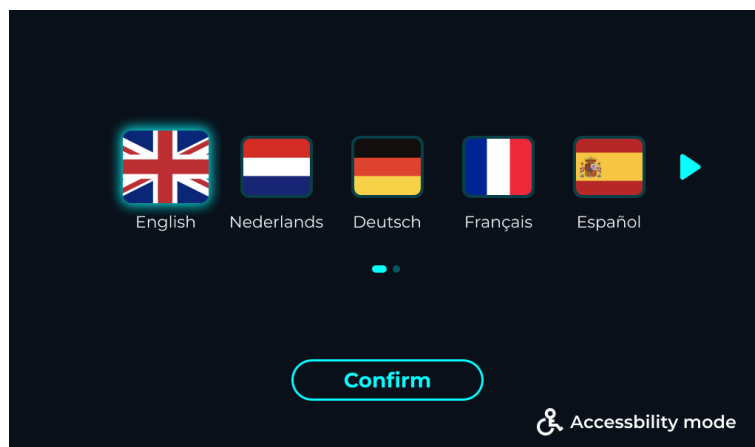
If using a credit card or RFID card, tap the card at the designated spot to view the charging details of the corresponding connector.

7.2.2 Change System Language

The system supports multiple languages, including English, Dutch, German, French, Spanish, Norwegian, and Italian. The default language is English, and users can change languages as needed.

Step 1 Tap the icon  in the top-right corner of the screen to enter the language selection screen.

- In the default interface, the language selection page is shown below:



- In the accessibility mode, the language selection screen is shown below: Tap **Exit** to exit the "Accessibility mode" and return to the default interface.

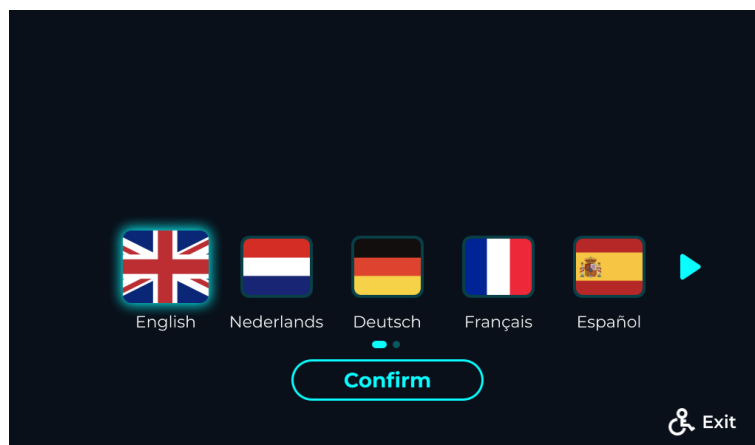


Figure 7-1

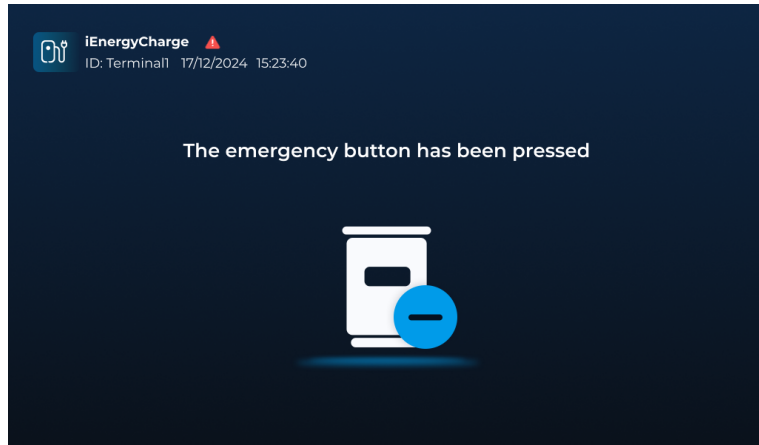
Step 2 Slide left or right to select the desired language, and tap the button to complete the language switch.

--End

7.2.3 Emergency Stop

In case of an emergency or device malfunction during charging, follow these steps to stop the charging process immediately:

Step 1 Press the red emergency stop button on the right side of the device. The screen will display a message indicating that the system is in emergency stop mode, and charging will cease. After that return the connector.



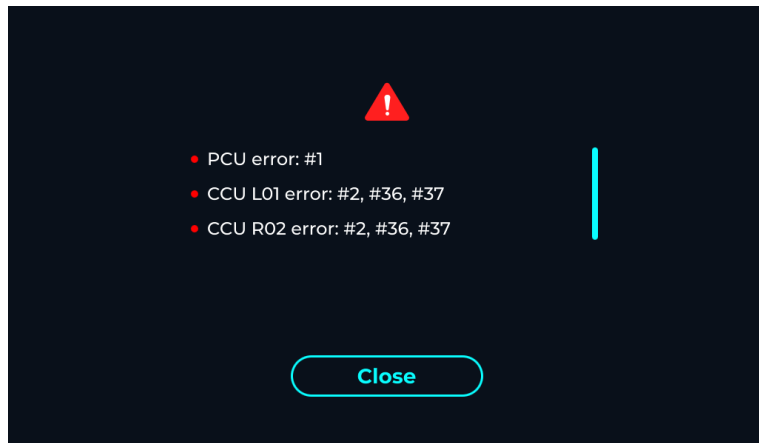
Step 2 Once the emergency or issue is resolved, reset the emergency stop button by rotating it. The product will resume normal operation, and the screen will show the Authentication Method Selection Page.

--End

7.2.4 Device Fault Diagnosis

When a fault occurs, the device will be unable to perform charging operations.

Step 1 After the system automatically detects a fault, it will display the device fault and enter the error detail list page.



Step 2 Tap the **Close** button to close the error detail list page and return to the device fault interface. Tap the red fault icon  in the upper left corner to view the fault details again.

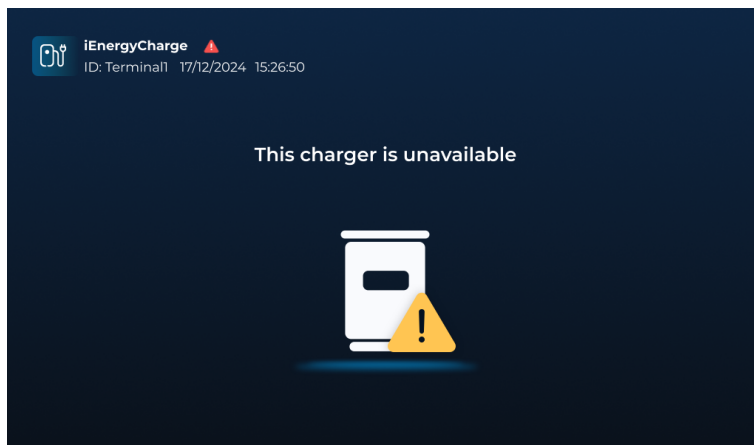


Figure 7-2

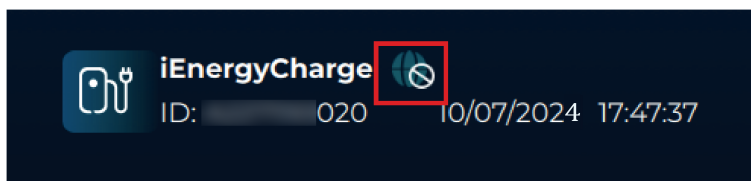
--End

7.2.5 Network Connection Diagnosis

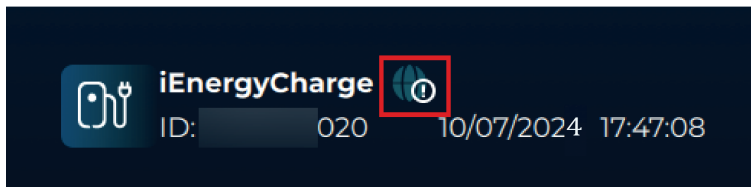
OCPP defines the protocol standard for network interconnection between the device and the charging management platform. The device accesses to OCPP via network connection. In case of a network error, the device cannot access to OCPP.

Network error may arise no matter which state the device is in. A network error icon will show on the screen in case of anything abnormal with the network, and disappears after the network has restored to normal status. The abnormal status includes:

- Network connection is normal, but the device cannot access to OCPP.



- No network connection, and the device cannot access to OCPP.



8 iEnergyCharge App

iEnergyCharge App is a tool that allows users to operate and manage their EV chargers. Users can complete account settings and charger configuration, manage charge cards, operate the charger, and reach customer service on the App.



- iEnergyCharge needed for commissioning only if the charger is used standalone, otherwise need to use iSolarCloud.
- Depending on the version of iEnergyCharge you are using, the user interface might be slightly different.

8.1 Install iEnergyCharge App

Requirements

- Mobile OS: Android 6.0 or later, iOS 11.0 or later;
- The phone can connect to WLAN or 2G/3G/4G/5G network;
- The phone has sufficient storage space to install the App;
- The phone has sufficient battery power.

Steps

Step 1 Search for **iEnergyCharge** in Google Play Store or App Store (iOS), or scan the QR code below with a mobile phone, and download the App following the onscreen instructions.



iEnergyCharge

Step 2 Tap the downloaded installation package and follow the onscreen instructions to complete the installation.

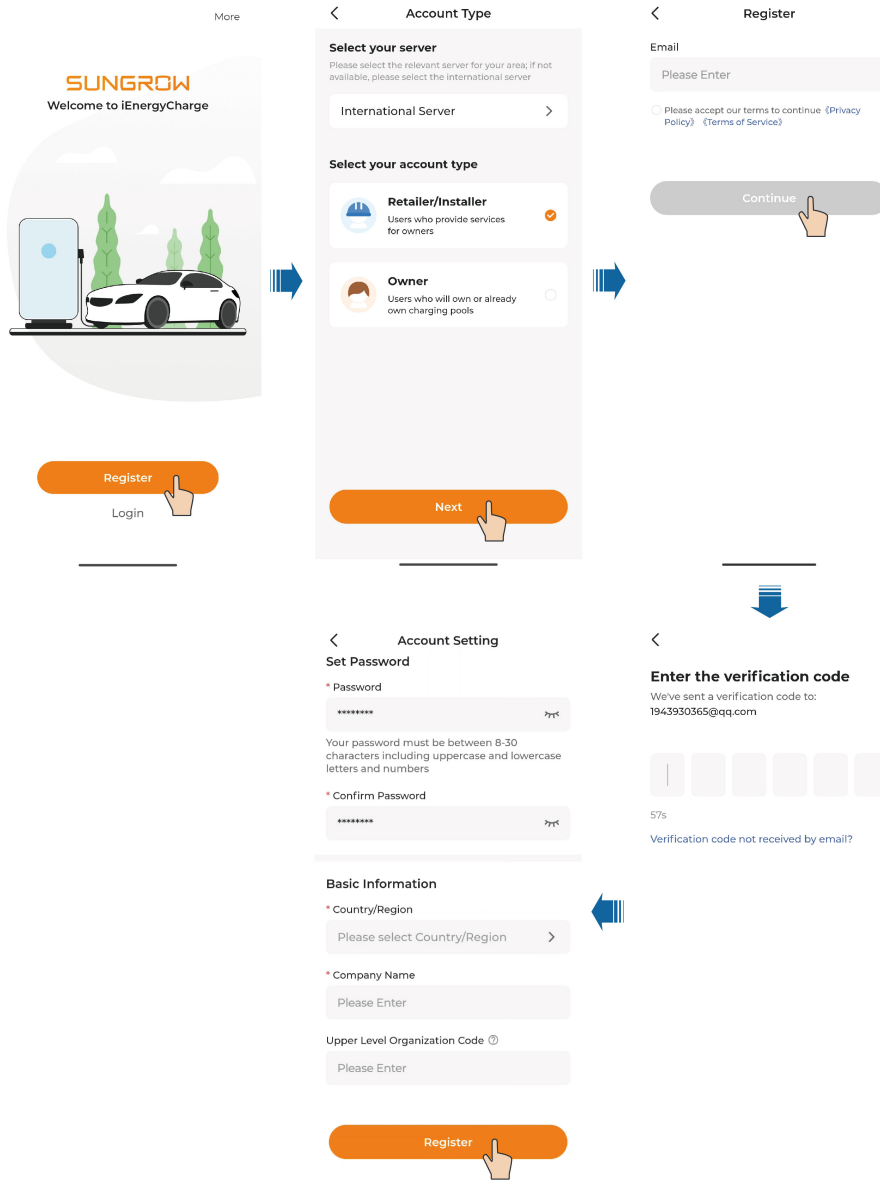
--End

8.2 Create an Account

Two types of account are available, Owner and Retailer/Installer.



- **Retailer/Installer:** Users who provides services for owners. Installer users can use the iEnergyCharge App for guided commissioning and site setup, global monitoring of the operation of charging pools and equipment, and can perform operational and maintenance repairs via the App when equipment fails. Retailer/Installer accounts do not support starting or stopping charging.
- **Owner:** Users who will own or already own charging pools. Owner users can use the iEnergyCharge App for charging, card management, and configuring chargers.
- After logging into the App, the content displayed varies depending on the user role and device type.



Step 1 Tap **Register**.

Step 2 Select a **Server**, then choose to create an **Retailer/Installer** or **Owner** account.

Step 3 Enter an email address, agree to the privacy policy and terms of service, and tap **Continue**.

Step 4 Enter the verification code you have received through email. If you do not receive a code by e-mail, please check your spam folder or ask customer service or the installer for the e-mail address that can be added to the safe senders.



- Users in mainland China may choose **Chinese Server**. Users in Europe may choose **European Server** and those in Australia may choose **Australian Server**. Users in other countries/regions may choose **International Server**.
- You can reach your upper-level retailer/installer for the "Code of Upper Level Installer/Retailer". Entering this code indicates that your organization is subordinate to an upper-level retailer/installer. If there is no upper-level retailer/installer organization, it is not necessary to fill in.

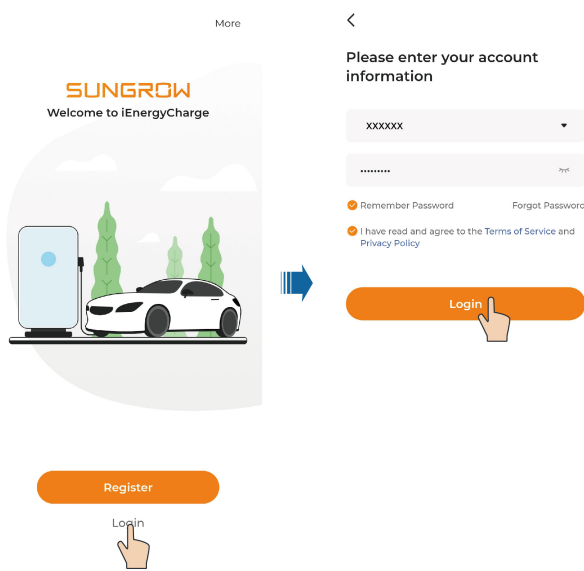
Step 5 Enter a password, which should be 8–32 characters long and contain uppercase letters, lowercase letters, and numbers. Then, select the country/region, and tap **Register**. An account is now created.

--End

8.3 Log in to an Account

Requirements

- You have installed the iEnergyCharge App;
- You have created an iEnergyCharge account, or obtained an account and password from the retailer/installer or SUNGROW.



Step 1 Open the iEnergyCharge App, and tap **Login**.

Step 2 Enter your account name and password on the login screen, and tap **Login**. You will then go to the **Home** screen of the App.

--End

8.4 Device Operation and Maintenance

For more detailed information regarding the use of iEnergyCharge App, see [iEnergyCharge User Manual](#). You can also open the App and choose **Account > Support > User Manual** to view the manual.

Alternatively, you can scan the QR code below to view the manual.



9 Device Maintenance

9.1 Routine Inspection

9.1.1 Inspection Instructions

For extended service life, please perform regular inspections on the device. The inspection interval should be determined with on-site conditions taken into consideration. In case the product works in extreme weather conditions, be sure to shorten the inspection interval and increase inspection frequency.

- Before opening the cabinet and performing an inspection, decommission the charger according to [9.3 Power off Equipment](#).
- In case of a fault with the charger, please contact your local service provider or manufacturer immediately. Do not open the charger without permission.
- If some devices need to be replaced during the inspection, please contact SUNGROW.
- Losses caused by failing to perform inspections in compliance with the instructions specified in this manual will not be covered by the warranty.
- Do not perform inspections on the product on rainy, humid, or windy days. SUNGROW shall not be held liable for any possible outcome resulting from inspections in such weather conditions.
- To minimize the risk of electric shocks, do not perform inspections that are not specified in this manual. If needed, please contact SUNGROW for inspection and repair services. Otherwise, damages caused therefrom will not be covered by the warranty.

9.1.2 Routine Inspection

It is recommended to perform routine inspections on the product once every 6 months. However, the actual inspection interval is subject to the charger's operating environment.

Inspection Details	Inspection Method	Recommended Inspection Interval
Device Appearance	• Check if there is any deformation with the charger's enclosure. • No paint peeling on the exterior of the charger. • Check if the nameplate and marks on the charger are all legible. • Check if there is anything abnormal with the exterior of peripheral	Once every 6 months

Inspection Details	Inspection Method	Recommended Inspection Interval
	components, such as the charging connector holder and antenna.	
Device Structure	• Check if the parts and components of the charger are secure and reliable. • Check if there is any damage to the internal power units, main control board, auxiliary low-voltage power supply, charging interface, and power supply interface. • Clean up the dust-proof fabric and dirt and dust inside the charger, and check if there is any wet spot.	Once every 6 months
Charging connectors and charging cables	• Check the charging connector for any foreign matter. Ensure the contacts inside the connector are clean without dirt. Clean off the foreign matter, if any, in time. • Check the charging connectors and charging cables for deficiencies, cracks, abrasion, damage, wire exposure, etc.	Once every 6 months
Electrical Connection	• Check if the electrical line is burnt or has aged, and if the fixing screws are loose. • Check whether the grounding cable is properly connected to allow for reliable grounding. • Check the cables for deficiencies, cracks, abrasion, damage, wire exposure, etc. • Other inspection items can be arranged based on the actual situation on the site.	Once every 6 months
Coolant	• Check whether the coolant of the liquid cooling system is sufficient. • Check if there is any leakage in the liquid cooling system.	Once every 6 months
Screen	• Check the screen for any damage or cracks.	Once every 6 months

Inspection Details	Inspection Method	Recommended Inspection Interval
	- Check whether the screen brightness and display clarity are normal. - Tap the screen to operate and check if the touch function is working properly. - Check the waterproof performance around the screen and the plastic panel.	

9.2 Troubleshooting



In case of a fault with the equipment, please contact your local service provider or manufacturer immediately. Do not open the equipment without permission.

Table 9-1 Charging Stop Code

Fault	Text Displayed	Fault Cause	Solutions
EV emergency stop	EV_E_Stop	The vehicle actively triggers a transition from State C to State B, initiating an emergency stop of charging on the vehicle end.	Unplug the charging connector to terminate the charging session.
EV reports a fault and stops	EV_Reported_Error	An error code has been set in the request message by the EV in a communication message.	Unplug the charging connector to terminate the charging session.
SLAC failure	SLAC_Match_Failure	The SLAC process handshake failed.	Unplug the charging connector to terminate the charging session.
SDP failure	SDP_Handshake_Failure	The SDP process	Unplug the charging connector to terminate the charging session.

Fault	Text Displayed	Fault Cause	Solutions
		handshake failed.	
UDP establishment failed	UDIPv6_Server_Fault	UDP server establishment failed.	Unplug the charging connector to terminate the charging session.
TCP establishment failed	TCPv6_Server_Fault	TCP server establishment failed.	Unplug the charging connector to terminate the charging session.
Protocol handshake failure	Protocol_Handshake_Failure	During protocol handshake communication between the vehicle and the dispenser, a protocol mismatch occurred, causing the handshake to fail.	Unplug the charging connector to terminate the charging session.
Service parameter incompatibility	Service_Incompatibility	During ServiceDiscovery/PaymentDetail interaction between the vehicle and the dispenser, communication was interrupted, or the request content did not comply with the protocol.	Unplug the charging connector to terminate the charging session.
Communication parameter incompatibility	Charge_Parameter_Incompatibility	During ChargeParameter message interaction between the vehicle and the	Unplug the charging connector to terminate the charging session.

Fault	Text Displayed	Fault Cause	Solutions
		dispenser, a parameter mismatch, communication interruption, or charging process termination occurred.	
Cable check fault	Cable_Check_Fault	During CableCheck message interaction between the vehicle and the dispenser, a parameter mismatch, communication interruption, or charging process termination occurred.	Unplug the charging connector to terminate the charging session.
Precharge fault	Precharge_Fault	During Precharge message interaction between the vehicle and the dispenser, a parameter mismatch, communication interruption, or charging process termination occurred.	Unplug the charging connector to terminate the charging session.
Current demand fault	Current_Demand_Fault	During CurrentDemand message interaction	Unplug the charging connector to terminate the charging session.

Fault	Text Displayed	Fault Cause	Solutions
		between the vehicle and the dispenser, a parameter mismatch, communication interruption, or charging process termination occurred.	
DC output overvoltage protection	DC_Output_O vervoltage_Pr otection6	The current DC output voltage has exceeded 1014 V for more than 1 s.	Unplug the charging connector to terminate the charging session.
DC output under-voltage protection	DC_Output_U ndervoltage_P rotection	The DC output voltage has remained below 185 V continuously for more than 10 s.	Unplug the charging connector to terminate the charging session.
DC output overcurrent protection	DC_Output_O vercurrent_Pr otection	The DC output current exceeds 325 A.	Unplug the charging connector to terminate the charging session.
Frame communication timeout	Frame_Comm unication_Tim eout	During communication between the vehicle side and the dispenser side, the vehicle side failed to initiate the next request, resulting in a frame communication timeout.	Unplug the charging connector to terminate the charging session.
Communication	Communication_Sequence_Fault	During communication between the	Unplug the charging connector to terminate the charging session.

Fault	Text Displayed	Fault Cause	Solutions
sequence fault		vehicle side and the dispenser side, the sequence of request messages sent by the vehicle side does not comply with the protocol.	
PCU module application failure	Pcu_Modules_Applied_Failed	During the charging process, the module resource request failed.	Unplug the charging connector to terminate the charging session.
DC output short circuit	DC_Output_Short_Circuit_Error	During the CableCheck phase, the dispenser side detected a short circuit between the positive and negative output lines while performing short-circuit detection.	Unplug the charging connector to terminate the charging session.

9.3 Power off Equipment

Prerequisite

Power off the equipment before routine inspections or maintenance.

CAUTION

Even after shutdown, components may remain hot and cause burns. Wear safety gloves when operating the equipment after it cools down

Follow these steps to power off the equipment. Failure to do so may cause personal injuries or device damage.

Step 1 Ensure the charging connector is detached from the EV.

Step 2 Disconnect the AC circuit breaker in the upstream distribution panel of the power cabinet.

Step 3 Open the power cabinet's cabinet door and switch off the molded-case circuit breaker, surge protection breaker, power supply breaker, and fan breaker.

Step 4 Open the dispenser cabinet door and switch off the internal miniature circuit breaker.

Step 5 Wait 10 minutes before performing voltage test.

- a. Confirm that the indicator and the display are both off.
- b. Use a multimeter set to AC mode to measure the voltage at the two AC input copper bars in the power cabinet, ensuring input voltage is 0.

Table 9-2 AC Input Voltage of the Power Cabinet

Test Point 1	Test Point 2	Voltage
L1	L2	0 V
L1	L3	0 V
L2	L3	0 V
L1		0 V
L2	N	0 V
L3		0 V
L1		0 V
L2	PE	0 V
L3		0 V

- c. Measure the voltage between L and N, and between L and PE of the dispenser using a multimeter set to AC mode to confirm the voltage is 0 V.
- d. Measure the voltage between each DC+ output copper bar and its corresponding DC- output copper bar in the power cabinet using a multimeter set to DC mode to confirm the voltage is 0 V.

Step 6 Once the voltage test is completed and the results meet the requirements, the equipment is powered off.

NOTICE

During operation of the charging system, maintenance on any dispenser within the system is prohibited if the power cabinet or any other dispenser is active. If maintenance is required, shut down the equipment following the steps above.

--End

9.4 Coolant Replacement

Prerequisite

Preparation:

4 L of Shell E4 charging coolant

NOTICE

- To ensure that the cold source system maintains optimal heat dissipation, replace the coolant regularly, with a recommended interval of every 3 years.
- Regularly check the coolant level and condition. If a decline in the coolant's thermal performance is detected, replace it immediately.

NOTICE

- To ensure compatibility with the cold source system, use the Shell E4 charging coolant included in the shipping accessories. Failure to use the specified coolant will cause leakage and material degradation.
- Do not mix different types of coolant, as this may damage the equipment. Sungrow will not be responsible for any issues arising from improper coolant use.
- Maintain the coolant level at the standard level (STD) ± 2 mm.

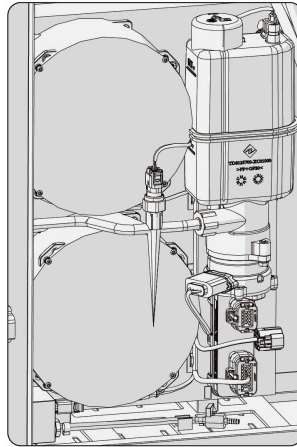


- If coolant replacement is required, contact Sungrow for service support.
- Wear protective gloves during operation.

Step 1 Ensure that the dispenser is in standby mode.

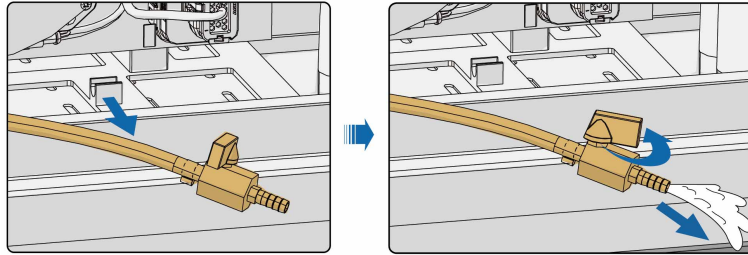
Step 2 On the display, manually start the liquid cooling unit.

Step 3 Open the dispenser cabinet door and locate the cold source system at the bottom of the cabinet.



Step 4 Detach the cold source system's drain hose from the buckle and pull it out of the cabinet.

Step 5 Open the drain valve and completely drain the old coolant.



NOTICE

- When replacing the coolant, use a dedicated collection container to prevent spillage.
- Do not dispose of used coolant arbitrarily or pour it into sewers. Recycle it in accordance with local regulations.

Step 6 Close the drain valve and secure the hose to the buckle.

Step 7 On the display, manually stop the liquid cooling unit.

Step 8 Open the oil tank cap, insert the filling tube, and slowly pour in the coolant at a uniform speed until the coolant level reaches $\text{STD} \pm 2 \text{ mm}$ in the oil tank.

Step 9 On the display, manually start the liquid cooling unit.

Step 10 Observe the oil tank level. Once it drops and stabilizes, top up as needed, keeping the level within $\text{STD} \pm 2 \text{ mm}$ and ensuring that the oil tube is fully filled with coolant. Then manually stop the liquid cooling unit.

Step 11 Remove the filling tube and tighten the tank cap. Check the cold source system to ensure there are no leaks.

--End

10 Appendix

10.1 Technical Data

Technical Parameters	CCS Dispenser
DC output	
Cable configuration	Dual cable / Single cable (optional)
Connector type	CCS2 + CCS2
Max. output current	2*CCS2: 500 A liquid-cooling (boost 800 A) 2*CCS2: 380 A (boost 600 A)
Output voltage range	150 V DC–1000 V DC
Communication to EV	DIN70121, ISO15118
Standby power consumption	≤ 40 W
Energy meter	MID-certified DC energy meter / Eichrecht-certified DC energy meter (optional)
General data	
Dimensions (W × H × D)	703±10 mm × 2204±10 mm × 850±10 mm
Cable length	CCS2: 5 m/7 m (optional)
Operating temperature range	-35°C to 50°C
Operating humidity range	5%–95% (non-condensing)
Operating altitude	≤ 2000 m
Operating noise level	≤ 65 dB (A) at 1 m distance/25°C, at full output power
Mechanical impact protection	IK10 (enclosure)
Enclosure rating	IP65
Anti-corrosion degree	C5
Anti-corrosion degree	C5
User interface	

Technical Parameters	CCS Dispenser
User authentication	RFID-card / Plug & play / Auto-charge / Plug & charge / Payment terminal (optional)
Display	10-inch color touch screen
RFID card system	ISO / IEC 14443A/B / ISO / IEC 15693 / NFC
Communication interface	Ethernet, RS485
Emergency button	Yes
LED display	Yes
Cable management system	Yes
Firmware update	Over-the-air update
Multilanguage system	English Other languages available by firmware upgrade
Protection	
Over/Under voltage protection	Yes
Overload protection	Yes
Over temperature protection	Yes
Leakage current protection	Yes
Surge protection	Yes
Short circuit protection	Yes
Certification and standards	
Certifications	CE/CB
Compliance	ETSI / EN 300 328, EN 300 330, EN 301 489-1/3/17/52, ETSI / EN 301 908-1/13, EN 50665, BS / EN IEC 61851-1, BS/EN IEC 61851-21-2, BS/IEC EN 61851-23/24, EN IEC 62311
Warranty	3 years (standard)

10.2 Quality Assurance

When product faults occur during the warranty period, SUNGROW will provide free service or replace the product with a new one.

The software security update period for this product aligns with the warranty period. During the warranty, security patches or updates will be provided if any vulnerabilities or compatibility issues are identified.

Evidence

During the warranty period, the customer shall provide the product purchase invoice and date. In addition, the trademark on the product shall be undamaged and legible. Otherwise, SUNGROW has the right to refuse to honor the quality guarantee.

Conditions

- After replacement, unqualified products shall be processed by SUNGROW.
- The customer shall give SUNGROW a reasonable period to repair the faulty device.

Exclusion of Liability

In the following circumstances, SUNGROW has the right to refuse to honor the quality guarantee:

- The free warranty period for the whole machine/components has expired.
- The device is damaged during transport.
- The device is incorrectly installed, refitted, or used.
- The device operates in harsh conditions beyond those described in this manual.
- The fault or damage is caused by installation, repairs, modification, or disassembly performed by a service provider or personnel not from SUNGROW.
- The fault or damage is caused by the use of non-standard or non-SUNGROW components or software.
- The installation and use range are beyond stipulations of relevant international standards.
- The damage is caused by unexpected natural factors.

For faulty products in any of above cases, if the customer requests maintenance, paid maintenance service may be provided based on the judgment of SUNGROW.



Product data such as product dimensions are subject to change without prior notice. The latest documentation from SUNGROW should take precedence in case of any deviation.

10.3 Contact Information

In case of questions about this product, please contact us. We need the following information to provide you the best assistance:

- Model of the device
- Serial number of the device
- Fault code/name
- Brief description of the problem

For detailed contact information, please visit: <https://www.sungrowpower.com/en/about-us/contact-us>

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Sungrow Power Supply Co., Ltd.

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